Forestry Canada Forêts Canada

Microorganisms associated with tree seeds: World Checklist 1990
Microorganismes associés aux graines d'arbre – Liste de référence mondiale 1990

R.K. Mittal, R.L. Anderson, and/et S.B. Mathur

Information Report/Rapport d'information PI-X-96E/F
Petawawa National Forestry Institute/
Institut forestier national de Petawawa

PETAWAWA NATIONAL FORESTRY INSTITUTE

In common with the rest of Forestry Canada, the Petawawa National Forestry Institute has as its objective the promotion of better management and wiser use of Canada's forest resource to the economic and social benefit of all Canadians. Objectives of program activities carried out at the Institute support this goal through discovery, development, demonstration, implementation, and transfer of innovations. Because it is a national institute, particular emphasis is placed on problems that transcend regional boundaries or that require special expertise and equipment that cannot be duplicated in Forestry Canada regional establishments. Such research is often performed in close cooperation with staff of the regional centres, provincial forest services, and the forest industry.

Research initiatives and technical services at the Institute encompass five major activities:

FOREST GENETICS AND BIOTECHNOLOGY — Integrates projects in tree genetics, soil microbiology, micropropagation, molecular genetics, meteorology, and seed research. It also includes the client services and seed bank operations of the National Tree Seed Centre, a long-standing program with extensive international affiliations.

FOREST MANAGEMENT SYSTEMS — This program integrates projects in fire, remote sensing, modelling, growth and yield, and forest pest management to provide research and development for the formulation and demonstration of forest management systems.

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Le mandat de l'Institut forestier national de Petawawa, comme celui des autres établissements de Forêts Canada, est de promouvoir une meilleure gestion et une utilisation plus rationnelle des ressources forestières du Canada, pour le bien économique et social de tous les Canadiens. Les objectifs des activités des programmes menés à l'Institut appuient ce mandat à travers la découverte, le développement, la démonstration, l'application et le transfert des innovations. En tant qu'institut national, il doit s'attacher à des problèmes qui débordent le cadre régional ou qui nécessitent des compétences particulières de même qu'un équipement non disponible aux installations régionales de Forêts Canada. La plupart du temps, les recherches sont effectuées en étroite collaboration avec le personnel des centres régionaux, des services forestiers des provinces et de l'industrie forestière.

Les travaux de recherche et les services techniques de l'Institut sont regroupés autour de cinq principales activités:

GÉNÉTIQUE FORESTIÈRE ET BIOTECHNOLOGIE — Ce programme encadre des études sur la génétique forestière, la microbiologie, la micropropagation, la génétique moléculaire et la recherche sur les semences. Il comprend également les services à la clientèle et la banque de semences du Centre national de semences forestières. Lié à plusieurs organismes internationaux, ce centre existe depuis longtemps.

SYSTÈMES D'AMÉNAGEMENT FORESTIER — Ce programme intègre en recherche et développement des opérations concernant les incendies de forêt, la télédétection, la météorologie, la modélisation, la croissance, la récolte et le RIMA. Il permet ainsi l'élaboration et la démonstration de systèmes d'aménagement forestier.

STATISTIQUES NATIONALES SUR LES RESSOURCES FORESTIÈRES — Ce programme fournit les renseignements biologiques, techniques et socio-économiques sur les ressources forestières du Canada. Il vise le développement des bases de données et l'établissement de nouveaux logiciels et bases de données pour aider à l'élaboration des politiques forestières. Le Programme d'inventaire forestier recueille l'information sur les forêts au niveau national, maintient le Système sur les ressources forestières canadiennes et prépare l'inventaire des forêts du Canada.

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LA FORÊT EXPÉRIMENTALE — Outre des peuplements naturels où l'on applique divers traitements dans le cadre des plans de recherche en sylviculture, la Forêt de Petawawa, mesurant 100 km^2, comprend de vastes superficies de plantations âgées de plus de 60 ans. Les plantations expérimentales livrent des données sur la croissance et la récolte à la suite des expériences de culture. Elles fournissent aussi du matériel génétique dont le lignage est répertorié et qui se révèlent de plus en plus utiles pour les études sur la micropropagation et la génétique moléculaire. C'est un lieu par excellence pour mettre à l'essai des stratégies d'aménagement forestier à court et à long termes.

MICROORGANISMS ASSOCIATED WITH TREE SEEDS: WORLD CHECKLIST 1990
MICROORGANISMES ASSOCIÉS AUX GRAINES D'ARBRE – LISTE DE RÉFÉRENCE MONDIALE 1990

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Cover: *Alternaria alternata* (Fr.) Keissler isolated from seeds of *Pinus strobus* L.

Page couverture : *Alternaria alternata* (Fr.) Keissler isolé des graines de *Pinus strobus* L.

Foreword

The Tree Seed Pathology Working Group was formed in 1981 by members of the Forest Tree & Shrub Seed Committee of the International Seed Testing Association (ISTA). Since the beginning the working group's objectives have been to test the effectiveness of tree seed health techniques, to prepare results for ISTA Congress presentations, and to evaluate potential testing techniques for inclusion in forest seed handbooks.

The working group, under the leadership of Dr. R.L. Anderson and J. Shepard, has been very active; it has developed a new method for assessing contamination of *Pinus elliottii* and *P. taeda* seeds by *Fusarium moniliforme* var. *subglutinans*.

Literature on the microorganisms associated with tree seeds is available in diverse sources which are sometimes unavailable to seed researchers. Recognizing the need to collect all relevant information regarding distribution of tree seed pathogens around the world, Dr. Anderson published a checklist in 1986 which covered an extensive list of hosts, organisms, and countries.*

Because of the continuous flow of new information such a work is never complete and the present publication updates the checklist. The value and usefulness of this revision by Drs. R.K. Mittal, R.L. Anderson, and S.B. Mathur is sure to be appreciated by nurserymen, pathologists, and entomologists throughout the world.

Ben S.P. Wang, Chairman 1986-1989
Forest Tree & Shrub Seed Committee
International Seed Testing Association

*Anderson, R.L. 1986. Checklist of Micro-Organisms Associated With Tree Seeds in the World, 1985. USDA Forest Service Southeastern Forest Experiment Station Gen. Tech. Rep. SE-39.

Avant-propos

Le group de travail pathologique sur les graines d'arbre a été formé en 1981 par les membres du Comité des graines d'arbres et d'arbrisseaux forestiers de l'Association internationale d'essais de semences (AIES). Dès le début, les objectifs du groupe de travail comprennent les essais d'efficacité de la technique concernant l'état de santé des graines, la présentation des résultats à la conférence(s) de l'AIES et l'évaluation des méthodes potentielles à l'inclusion des manuels des graines forestières.

Dingé par le Dr. R.L. Anderson, le groupe de travail est très actif et il a développé de nouvelles méthodes pour évaluer la contamination des graines de *Pinus elliotti* et *P. taeda* par *Fusarium monoliforme* var. *subglutinans*.

Il y a des documents traitant les microorganismes associés aux graines d'arbre, mais ils ne sont pas toujours à la disposition des chercheurs. Étant donné la nécessité de recueillir des informations pertinentes, le Dr. Anderson a publié une liste de référence qui comprenait les hôtes, les organismes et les pays.*

À cause de l'accumulation continue de nouveaux renseignements, une telle publication n'est jamais complétée. C'est pourquoi on s'attend à ce que les pépiniéristes, les pathologistes et les entomologiste à travers le monde trouvent utile la présente publication revue par les Drs. R.K. Mittal, R.L. Anderson et S.B. Mathur.

Ben S.P. Wang, président
Comité des semences d'arbres et d'arbustes forestiers
Association internationale d'essais de semences

*Anderson, R.L. 1986. Checklist of Micro-Organisms Associated With Tree Seeds in the World, 1985. USDA Forest Service Southeastern Forest Experiment Station Gen. Tech. Rep. SE-39.

Introduction

Forestry throughout the world is becoming increasingly dependent on a constant supply of good quality seeds from trees selected for increased growth, better yield, and resistance to insects and disease. Healthy seeds are essential for the production of healthy crops. Poor seed germination in nurseries may be due to infection by seed-borne pathogens. The high cost of regeneration efforts makes it imperative that we use healthy seed. Seed health testing is primarily concerned with evaluating the presence or absence of disease-causing organisms such as fungi, bacteria, and virus pests. But it is often difficult to ascertain whether the causal agent of seed or seedling disease is seed-borne or soil-borne. Seed-coat microflora can cause the death of seed or indirectly weaken the seed, thereby predisposing it to attacks of soil fungi. Hence, it is important to know the characteristics of fungal diseases associated with seeds of important tree species — the damage caused, where, when, and under what circumstances infection occurs, and what can be done to prevent damage.

Seeds of several conifers and hardwoods are prone to attack by fungi. However, the pathogenicity of many of these fungi has been much debated. Fungi attacking seeds are usually moulds. Many of these develop on seed surfaces; others cause internal infections. Most seed fungi are considered saprophytic, and they are now also being studied as causal agents of severe pre- and post-emergence losses. The influence of moulds on seed can vary. Their mere presence does not necessarily harm seed although it is generally recognized that as the mould counts increase, the viability of seed decreases. Early studies on pine seeds showed that these moulds were virtually harmless on seed of high viability, but poor seed suffered a substantial reduction in germination. Fungi associated with tree seed vary in different host species, in different regions, and in different years.

Seed-borne fungi are more prevalent in the tropics where the climatic conditions facilitate their development. However, even in temperate climates fungi are an important factor. For example, most conifer seeds have a tendency to become dormant and must be pre-chilled (moist-cold stratification) before sowing. Some fungi reportedly grow and spread even at cold prechilling temperatures, the high moisture being the inducing factor. These fungi will either reduce seed germinability or infect the germinant and cause death. Dr. P. Neergaard in his book (1977, Macmillan) "Seed Pathology" emphasized that the grower cannot observe directly and does not know the yield reductions caused by fungi. Often the amount of damage can only be revealed by experiment and detailed investigation.

A few years ago, the International Seed Testing Association (ISTA) published "An Annotated List of Seedborne Diseases" (Richardson 1979), which was followed by supplements. These reports list the fungi occurring on all plant species including trees, detail how fungi affect seeds, note whether or not a control is available, and give the source of information. In 1981, the Forest Tree and Shrub Seed Committee of ISTA formed the Tree Seed Pathology Working group. The tasks assigned to the group were to identify seedborne pathogens of trees that could cause serious problems if transported to other geographic areas, to develop testing methods, to submit infested seeds for comparative tests, and to submit proposals for ISTA rules changes.

To accomplish this, it was necessary to identify the microorganisms that are found on seeds. The Tree Seed Pathology Working group shouldered this responsibility and published "A checklist of microorganisms associated with tree seeds in world, 1985" (Anderson 1986). The need for supplementing it with more recent information was soon realized which resulted in the present revised version.

Introduction

Partout dans le monde, la foresterie devient plus en plus dépendante des graines de qualité supérieure. Elles sont sélectionnées pour assurer une meilleure croissance, une récolte plus abondante ainsi qu'une résistance plus solide aux insectes et aux maladies. Il est primordial d'avoir des graines vigoureuses si l'on veut un peuplement vigoureux. Un faible taux de germination dans les pépinières peut être dû à des infections causées par les microorganismes pathogènes apparaissant sur les graines. Puisque le coût de la régénération est élevé, l'emploi des graines de bonne santé s'impose. Un essai de graine du point de vue santé relève premièrement l'examen de présence ou d'absence de microorganismes pathogènes comme les champignons, les bactéries et les virus. Cependant, il est difficule de vérifier si ces agents causant une maladie des graines ou des semis prennent leur origine sur les graines ou dans le sol. Une microflore du tégument peut provoquer la mort de la graine et si elle ne fait que l'affaiblir indirectement, la graine devient plus vulnérable aux attaques des champignons du sol. Donc, il est capital de connaître les caractéristiques des maladies des graines causées par les champignons y associés. Il faut aussi savoir où, quand, dans quelles circonstances les infections sont survenues affectant des essences importantes et quelles peuvent être les mesures de prévention.

Des graines de résineux et des feuillus sont assujetties aux attaques des champignons. Pourtant, le caractère pathogénique de ces champignons paraît contradictoire. En général, ce sont les moisissures qui sont les champignons attaquant les graines; les unes se développent sur la surface, les autres à l'intérieur des graines causant des infections. La plupart d'entre elles sont considérées comme saprophytes. On les étudie aussi en tant qu'agents causant des pertes considérables avant et après l'émergence. L'influence des moisissures sur les graines peut varier. Leur présence seul n'endommage pas nécessairement les graines; il est toutefois reconnu qu'à mesure qu'augmente le volume de moisissures, diminue la viabilité des graines. Selon les études antérieures sur les graines de pin, ces moisissures étaient inoffensives aux graines ayant une viabilité solide, alors que celles qui étaient plus faibles ont montré une baisse importante de taux de germination. Les champignons associés aux graines d'arbre varient selon les essences hôtes, les régions et les années.

Les champignons nés sur les graines sont plus répandus dans les pays tropicaux où les conditions climatiques facilitent leur développement. Toujours est-il vrai que ceux qui apparaissent au climat tempéré sont aussi importants. Par exemple, la plupart des graines de résineux ont tendance à devenir dormantes et elles doivent subir une stratification froide et humide avant d'être semées. D'après des études, quelques champignons se répandent, à cause de l'humidité élevée, même aux températures de stratifications froides. Ces champignons réduiront la capacité de germination ou bien infecteront le germinant et provoqueront la mort de la graine. Dans son livre intitulé «Seed Pathology» (1977. MacMillan), le Dr. P. Neergaard a souligné le fait que le cultivateur ne peut faire d'observation directe et ne se rende pas compte de la diminution de la récolte due aux champignons. Le plus souvent, l'importance du dommage ne peut être révélée qu'à l'aide des expériences et des recherches approfondies.

L'Association internationale d'essais de semences (AIES) a publié la Liste annotée des maladies des graines (Richardson 1979) suivie des suppléments. Ces publications énumèrent les champignons survenus à toutes les plantes, y compris les arbres, décrivent en détails comment les champignons affectent les graines, indiquent la disponiblité des moyens de suppression et donnent les sources d'information. En 1981, le Comité des semences d'arbres et d'arbustes forestiers a formé le Groupe de travail pathologique sur les graines d'arbres. Plusieurs tâches ont été assignées à ce groupe, comme identifier les microorganismes pathogéniques des arbres affectant leur transport d'un lieu géographique à l'autre, développer des méthodes d'essai, soumettre les graines infectées à des essais comparatifs et préparer des propositions pour changer des réglements de l'AIES.

Les questions les plus essentielles étaient l'identification et la localisation des microorganismes. Le groupe de travail s'est chargé de cette responsabilité et il a fait paraître une liste des microorganismes associés aux graines d'arbres dans le monde 1985 (Anderson. 1986). La nécessité d'y ajouter des renseignements plus récents a inspiré la présente version revue.

Acknowledgments

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Use of Checklist - Some Hints:

The present revised Checklist follows the pattern of R.L. Anderson's checklist of 1985. Listed are the hosts, their associated microorganisms, bibliographic reference(s), and the countries of origin. An asterisk (*) after the name of the country indicates that a treatment is available, a dagger (†) indicates an organism that causes a disease of economic importance, and the symbol § indicates an organism for which evidence concerning its seedborne nature is incomplete or contradictory. Where no country is listed, the origin of the organism is not known. 'General control' implies that the control mechanism described in the reference applies to a number of host species, among which would be the host species in question. 'Spp.' implies several species and 'sp.' a single species.

Notes sur la liste de référence :

La présente publication suit le modèle de la liste de référence 1985 de R.L. Anderson et énumère les hôtes, les microorganismes y associés, les références bibliographiques et les pays d'origine. L'astérisque (*) après le nom de pays signifie qu'un traitement est disponible, une croix (†) veut dire que l'organisme cause une maladie grave du point de vue économique, et le symbole § spécifie un organisme dont les caractéristiques reliées aux graines paraissent contradictoires. Au cas où il n'y aurait pas de nom de pays, cela veut dire que l'on ignore l'origine du microorganisme. La mention «Suppression générale» révèle les moyens de suppression décrits dans la section de référence qui sont applicables à de nombreuses essences hôtes parmi lesquelles on trouverait le hôte en question. «Spp.» indique plusieurs essences, alors que «sp.» une seule essence.

Glossary/Glossaire/Glossar

English	Français	Deutsch
Africa	Afrique	Afrika
Argentina	Argentine	Argentinien
Asia	Asie	Asien
Australia	Australie	Australien
Bangladesh	Bangladesh	Bangladesh
Belize	Bélize	Belise
Brazil	Brézil	Brasilien
Canada	Canada	Kanada
Caribbean	les Antilles	Karibische Inseln
Central America	Amérique centrale	Zentralamerika
Central Asia	Asie centrale	Zentralasien
Chile	Chili	Chile
Colombia	Colombie	Kolumbien
Corsica	Corse	Korsika
Costa Rica	Costa Rica	Kosta Rika
Cuba	Cuba	Kuba
Cyprus	Chypre	Zypern
Czechoslovakia	Tchécoslovaquie	Tschekoslowakei
Denmark	Danemark	Dänmark
Dominican Republic	République Dominicaine	Dominikanische Republik
East Africa	Afrique de l'Est	Ostafrika
East Germany	Allemagne de l'Est	DDR
Egypt	Égypte	Ägypten
England	Angleterre	England
Europe	Europe	Europa
Finland	Finlande	Finland
France	France	Frankreich
Guatemala	Guatemala	Guatemala
Hawaii	Hawaii	Hawaii
Honduras	Honduras	Honduras
Hungary	Hongrie	Ungarn
India	Inde	Indien
Israel	Israël	Israel
Italy	Italie	Italien
Japan	Japon	Japan
Kenya	Kenya	Kenya
Madagascar	Madagascar	Madagaskar
Malawi	Malawi	Malawi
Malaysia	Malaisie	Malaisien
Mauritius	Maurice	Mauritius
New Zealand	Nouvelle-Zélande	Neuseeland
Nicaragua	Nicaragua	Nikaragua
Nigeria	Nigeria	Nigeria
North America	Amérique du Nord	Nordamerika
North Carolina	Caroline du Nord	Nordkarolina
Panama	Panama	Panama
Philippines	Philippines	Philippines
Poland	Pologne	Polen
Portugal	Portugal	Portugal
Queensland	Queensland	Queensland
Rumania	Roumanie	Rumänien
Rwanda	Ruanda	Ruanda
Solomon Islands	Îles Salomon	Salomoninseln
South Korea	Corée du Sud	Südkorea
Spain	Espagne	Spanien
Surinam	Surinam	Surinam
Syria	Syrie	Syrien
Taiwan	Taïwan	Taiwan
Thailand	Thaïlande	Thailand
Trinidad	Trinidad	Trinidad
UK	R.-U.	Groß-britannien
Uruguay	Uruguay	Uruguay
USA	É.-U.	USA
USSR	URSS	UdSSR
West Germany	Allemagne de l'Ouest	BRD
West Indies	les Antilles	Westindische Inseln
Yugoslavia	Yougoslavie	Jugoslawien
Zambia	Zambie	Sambia

Checklist of microorganisms/
Liste de référence des microorganismes

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Abies* spp.**		
Fusarium culmorum	24	UK
Heterobasidion annosum	25	North America
Lirula macrospora	80	USSR
Melanospora zamiae	25	UK
Rhizoctonia solani	124	USA
Sclerotium sp.	88, 215	
Truncatella hartigii	24	UK
***Abies amabilis* Dougl. ex Forbes**		
Botrytis cinerea	170	South Korea
Caloscypha fulgens	298	Canada
Fusarium semitectum	170	South Korea
General control	84	Canada
***Abies balsamea* (L.) Mill.**		
Rhizoctonia solani	311	USA
***Abies fraseri* (Pursh) Poir.**		
Rhizoctonia solani	311	USA
***Abies grandis* (Dougl. ex D. Don) Lindl.**		
Caloscypha fulgens	298	Canada
Fusarium moniliforme	170	South Korea
General control	84	Canada
***Abies nordmanniana* (Steven) Spac.**		
Fusarium moniliforme	170	South Korea
Abies sibirica		
Alternaria circinans	233	USSR
Aspergillus candidum	233	USSR
A. flavus	233	USSR
A. glaucus	233	USSR
A. niger	233	USSR
A. ochraceum	233	USSR
Cladosporium herbarum	233	USSR
Fusarium avenaceum	233	USSR
Hormiscium stilbosporum	233	USSR
Monilia sitophyla	233	USSR
Mucor alboater	233	USSR
M. mucedo	233	USSR
M. plumbeus	233	USSR
M. racemosus	233	USSR
Penicillium expansum	233	USSR
Phoma strobiligena	233	USSR
Pullularia pullulans	233	USSR
Rhizopus nigricans	233	USSR
Spicaria elegans	233	USSR
Thamnidium elegans	233	USSR
Trichoderma lignorum	233	USSR

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Acacia* spp.**		
Fusarium oxysporum f. sp. *koae*	102	Hawaii
Hapalophragmiopsis ponderosum	197	India
Phoma sp.	170	Egypt
***Acacia auriculiformis* A. Cunn. ex Benth.**		
Aspergillus flavus	49, 73, 237	Philippines, Thailand
A. niger	49, 73, 237	Philippines, Thailand
A. terreus	49	Thailand
Bacteria	49	Thailand
Botryodiplodia theobromae	49	Thailand
Chaetomium sp.	237	Philippines
Cladosporium sp.	73	Philippines
Curvularia pallescens	73, 237	Philippines
C. brachyspora	49	Thailand
Fusarium semitectum	73, 237	Philippines
Penicillium spp.	49	Thailand
Phoma sp.	170	India
Syncephalastrum racemosum	49	Thailand
***Acacia confusa* Merr.**		
Aspergillus spp.	2	Philippines
Botryodiplodia theobromae	2	Philippines
Cladosporium cladosporoides	2	Philippines
Curvularia lunata	2	Philippines
Penicillium spp.	2	Philippines
Phoma sp.	2	Philippines
Rhizopus sp.	2	Philippines
***Acacia modesta* Wall.**		
Fusarium semitectum	170	India
Phoma sp.	170	India
***Acacia raddiana* Savi**		
Fusarium moniliforme	170	Israel
Phoma sp.	170	Israel
Acacia tarnesiana		
Aspergillus flavus	73	Philippines
***Acer* spp.**		
Botrytis cinerea	170	South Korea
Fusarium moniliforme	170	South Korea
Gloeosporium acericola	232	USSR
Phyllosticta sp.	210	
Phyllosticta platanoidis f. sp. *negundinis*	232	USSR

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Acer campester L.		
Verticillium sp.	170	South Korea
***Acer ginolamax* Thunb.**		
Botrytis cinerea	170	South Korea
***Acer palmatum* Thunb.**		
Ascochyta sp.	170	South Korea
Colletotrichum sp.	170	South Korea
Fusarium semitectum	170	South Korea
Pestalotia sp.	170	South Korea
Phoma sp.	170	South Korea
Phomopsis sp.	170	South Korea
Septoria sp.	170	South Korea
***Acer rubrum* L.**		
Alternaria tenuis	98, 99	USA
Aspergillus spp.	98, 99	USA
Botrytis cinerea	98, 99	USA
Coniothyrium sp.	98, 99	USA
Curvularia inequalis	98, 99	USA
Cytospora sp.	98, 99	USA
Diplodia sp.	98, 99	USA
Epicoccum purpurascens	98, 99	USA
Fusarium sp.	98, 99	USA
Geotrichum spp.	98, 99	USA
Hormodendron sp.	98, 99	USA
Penicillium spp.	98, 99	USA
Physalospora obtusa	98, 99	USA
Stemphylium consortiale	98, 99	USA
Trichoderma viride	98, 99	USA
White, sterile fungi	98, 99	USA
***Acer saccharum* Marsh.**		
Alternaria sp.	140, 256	USA
A. tenuis	98, 99	USA
Aspergillus spp.	98, 99	USA
Aureobasidium sp.	140, 256	USA
Bacillus sp.	140	USA
Botrytis cinerea	98, 99	USA
Candida sp.	140	USA
Chaetophoma sp.	98, 99	USA
Cladosporium sp.	140	USA
Coniothyrium sp.	98, 99	USA
Cylindrocephalum spp.	98, 99	USA
Cytospora sp.	99	USA
Diplodia sp.	98, 99	USA
Epicoccum sp.	140, 256	USA
Fusidium sp.	98, 99	USA
Helminthosporium sp.	98, 99	USA
Hormodendron sp.	98, 99	USA
Mucor sp.	98, 99, 140	USA
Paecilomyces sp.	98, 99	USA
Penicillium sp.	98, 99, 140, 256	USA
Phomopsis sp.	140	USA
Physalospora obtusa	98, 99	USA
Rhizopus sp.	98, 99, 140, 256	USA
Trichoderma viride	98, 99	USA
Ulocladium sp.	140	USA
White sterile fungus	98	USA
***Acer saccharinum* L.**		
Alternaria tenuis	98, 99	USA
Aspergillus spp.	98, 99	USA
Botrytis cinerea	98, 99	USA
Chaetomium globosum	98, 99	USA
Coniothyrium sp.	98, 99	USA
Curvularia inequalis	98, 99	USA
Epicoccum purpurascens	98, 99	USA
Fusarium sp.	98, 99	USA
Geotrichum sp.	98, 99	USA
Gloeosporium sp.	98, 99	USA
Helminthosporium sp.	98, 99	USA
Hormodendron sp.	98, 99	USA
Penicillium sp.	98, 99	USA
Phomopsis sp.	98, 99	USA
Physalospora obtusa	98, 99	USA
Sordaria fimicola	98, 99	USA
Trichoderma viride	98, 99	USA
White, sterile fungi	98, 99	USA
***Acrocarpus fraxinifolius* Wright**		
Botryodiplodia theobromae	170	Rwanda
Botrytis cinerea	170	India
Cephalosporium sp.	170	Rwanda*
Colletotrichum sp.	170	Rwanda
Fusarium equiseti	170	India, Rwanda*
F. moniliforme	170	India, Rwanda*
F. semitectum	170	India, Rwanda*
Myrothecium roridum	170	Rwanda*
Phoma sp.	170	India, Rwanda*
Phomopsis sp.	170	Rwanda*
***Adenanthera microsperma* Teijsm. & Binn.**		
Botryodiplodia sp.	170	India
Fusarium moniliforme	170	India
Fusarium semitectum	170	India
Pestalotia sp.	170	India
Phoma sp.	170	India
***Adiana cordifolia* Benth. & Hook. ex Brandis**		
Fusarium moniliforme	170	India
Phoma sp.	170	India
***Agathis dammara* (Lamb.) Rich.**		
Fusarium solani	237	Philippines
***Agathis macrophylla* (Lindley) Masters**		
Colletotrichum gloeosporioides	237	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Agathis robusta* (C. Moore) F.M. Bailey**		
Aspergillus flavus	237	Philippines
Phoma sp.	237	UK
***Albizia falcataria* Fosb.**		
Alternaria tenuis	2	Philippines
Aspergillus spp.	2	Philippines
A. flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Botryodiplodia theobromae	73	Philippines
Cephalosporium sp.	170	Philippines
Chaetomium sp.	2	Philippines
Fusarium moniliforme	170	Philippines
F. semitectum	170	Philippines
Penicillium spp.	2, 73	Philippines
Pestalotia sp.	170	Philippines*
Phoma sp.	170	Philippines
Rhizopus sp.	73	Philippines
***Albizia gumifera* C. A. Sm.**		
Fusarium equiseti	170	Rwanda
F. semitectum	170	Rwanda
***Albizia julibrissin* Durazzini**		
Aspergillus flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Fusarium moniliforme	73, 237	Philippines
F. oxysporum f. sp. *perniciosum*	237	USA
Penicillium sp.	73, 237	Philippines
***Albizia lebbek* Benth.**		
Aspergillus clavatus	182	India
A. flavus	237	Philippines
A. niger	73	Philippines
A. ochraceous	182	India
A. phoenicis	182	India
A. sulphureous	182	India
A. sydowi	182	India
A. versicolor	182	India
A. wentii	182	India
Fusarium solani	73, 237	Philippines
Penicillium spp.	2	Philippines
Rhizopus oryzae	182	India
Spicaria simplicissima	182	India
***Albizia procera* Benth.**		
Aspergillus spp.	2	Philippines
A. flavus	73	Philippines
A. niger	73	Philippines
Fusarium semitectum	2	Philippines
F. moniliforme	73	Philippines
F. solani	237, 73	Philippines
Penicillium spp.	2, 73	Philippines
Pestalotia sp.	2, 237	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Albizia stipulata Boivin		
Fusarium moniliforme	170	India
F. solani	170	India
Macrophomina phaseolina	170	India
Phoma sp.	170	India
***Alnus* spp.**		
Ciboria alni	158, 312	Czechoslovakia
Cylindrosporella alena	143, 205	Denmark
Taphrina alni-incanae	339	Poland
***Alnus maximowiczii* Callier ex Schneid.**		
Cephalosporium sp.	170	South Korea
***Alnus sibirica* Fisch. ex Turcz**		
Monilia sp.	170	South Korea
Phoma sp.	170	South Korea
***Alstonia macrophylla* Wall.**		
Aspergillus flavus	73, 237	Philippines
Fusarium moniliforme	73, 237	Philippines
F. semitectum	73, 237	Philippines
F. solani	73, 237	Philippines
Penicillium sp.	73, 237	Philippines
***Anacardium occidentale* L.**		
Aspergillus tamraii	214	Nigeria
Lasiodiplodia theobromae	214	Nigeria
Macrophomina sp.	170	Costa Rica
Penicillium citrinum	214	Nigeria
***Anogeissus pendula* Edgew.**		
Fusarium semitectum	170	Costa Rica
Phoma sp.	170	Costa Rica
***Anthocephalus cadamba* Miq.**		
Phoma sp.	170	India
***Anthocephalus chinensis* Hassk.**		
Aspergillus spp.	2	Philippines
Penicillium spp.	2	Philippines
***Antidesma glaesbilla* Gaertn.**		
Aspergillus flavus	73	Philippines
Penicillium sp.	73	Philippines
***Araucaria angustifolia* (Bert.) Kuntze**		
Alternaria sp.	145	Australia
A. tenuis	145	Australia
Botryodiplodia sp.	145	Australia
Fusarium sp.	145	Australia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
F. oxysporum	145	Australia
F. solani	145	Australia
Penicillium sp.	145	Australia
Rhizoctonia solani	145	Australia
Pleiochaeta sp.	145	Australia
Pythium sp.	145	Australia
Rhizopus sp.	145	Australia
***Araucaria bidwillii* Hook.**		
Botryodiplodia sp.	145	Egypt
Fusarium oxysporum	145	Egypt
F. solani	145	Egypt
Helminthosporium sp.	145	Egypt
Papulaspora sp.	145	Egypt
Rhizoctonia solani	145	Egypt
Trichothecium sp.	145	Egypt
***Araucaria cunninghamii* Sweet**		
Alternaria sp.	145	Australia
Botryodiplodia spp.	145	Australia
B. theobromae	247	Australia
Chaetomium sp.	145	Australia
Fusarium sp.	145	Australia
F. oxysporum	145	Australia
F. solani	145	Australia
Helminthosporium sp.	145	Australia
Penicillium sp.	145	Australia
Pestalotia sp.	145	Australia
Pythium sp.	145	Australia
Rhizopus spp.	145	Australia
Rhizoctonia solani	145	Australia
Sclerotium sp.	145	Australia
***Araucaria excelsa* R. Br.**		
Cryptospora longispora	144	USA
Dothiorella sp.	144	USA
Pestalotia sp.	144	USA
Phoma araucariae	13	USA
***Araucaria heterophylla* (Salisbury) Franco**		
Aspergillus sp.	145	Egypt
Alternaria sp.	145	Egypt
A. tenuis	86, 87, 145	Egypt
Cladosporium sp.	145	Egypt
Epicoccum sp.	145	Egypt
Fusarium sp.	145	Egypt
F. lateritium	145	Egypt
F. oxysporum	86, 87, 145	Egypt
F. solani	86, 87, 145	Egypt
Penicillium sp.	145	Egypt
Pythium sp.	145	Egypt
Rhizoctonia solani	145	Egypt
***Artocarpus heterophyllus* Lam.**		
Botryodiplodia theobromae	168	India

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Azadirachta indica* Juss.**		
Aspergillus spp.	287	Malaysia
Botryodiplodia sp.	170	India
Cephalosporium sp.	170	India
Drechslera sorokiniana	170	India
Fusarium sp.	170	India
F. equiseti	170	India
F. moniliforme	170	India
F. semitectum	170	India
F. solani	170	India
Macrophomina phaseolina	170	India
Myrothecium roridum	170	India
Phoma sp.	170	India
Phomopsis sp.	170	India
Verticillium sp.	170	India
***Bauhinia* sp.**		
Alternaria longissima	49	Thailand
Aspergillus candidus	49	Thailand
A. flavus	49	Thailand
A. nidulans	49	Thailand
A. niger	49	Thailand
A. restrictus	49	Thailand
A. terreus	49	Thailand
Cladosporium spp.	49	Thailand
Curvularia lunata	49	Thailand
Fusarium semitectum	49	Thailand
Penicillium spp.	49	Thailand
Pestalotiopsis spp.	49	Thailand
Phoma sp.	49	Thailand
***Bauhinia acumata* L.**		
Aspergillus flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Penicillium sp.	73, 237	Philippines
***Bauhinia purpurea* L.**		
Pestalotiopsis sp.	170	India
***Bauhinia variegata* L.**		
Pestalotiopsis sp.	170	India
Phoma sp.	170	India
***Betula* spp.**		
Ciboria betulae	41, 312	Asia, Europe, North America, Czechoslovakia
Cherry leaf roll virus	61, 269	UK
General	153	East Germany Poland

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Betula alba* L.**		
Cherry leaf roll virus	64	UK
***B. alleghanensis* Britton**		
Alternaria sp.	279	USA
A. tenuis	98, 99	USA
Aspergillus spp.	98, 99, 289	USA
Botrytis cinerea	98, 99	USA
Chaetomium funicola	98, 99	USA
C. globosum	98, 99	USA
Coniothyrium olivaceum	289	USA
Coniothyrium sp.	98, 99	USA
Curvularia inequalis	98, 99	USA
Epicoccum purpurascens	98, 99	USA
Fusarium spp.	98, 99	USA
Helminthosporium sp.	98, 99	USA
Hormodendron sp.	98, 99	USA
Penicillium spp.	98, 99, 289	USA
Phomopsis sp.	98, 99	USA
Rhizopus sp.	98, 99	USA
Stemphylium consortiale	98, 99	USA
Trichothecium roseum	98, 99	USA
Verticillium sp.	98, 99	USA
***Betula papyrifera* Marsh.**		
Alternaria sp.	289	USA
Alternaria tenuis	98, 99	USA
Aspergillus spp.	98	USA
Botrytis cinerea	98	USA
Coniothyrium sp.	98, 289	USA
Epicoccum purpurascens	98, 99	USA
Fusarium sp.	98, 99	USA
Hormodendron sp.	98, 99	USA
Penicillium spp.	98, 99	USA
Phomopsis sp.	98, 99	USA
Rhizopus sp.	98, 99	USA
Sporotrichum sp.	98, 99	USA
***Betula pendula* Roth**		
Alternaria alternata	160	Finland
A. tenuissima	160	Finland
Aureobasidium pullulans	160	Finland
Cherry leaf roll virus	269	East Germany
Cladosporium herbarum	160	Finland
Penicillium spp.	160	Findland
Trichoderma viride	160	Finland
Trichothechium roseum	160	Finland
***Betula verrucosa* Ehrh.**		
Alternaria tenuis	154	USSR
Aspergillus flaviceps	154	USSR
Cephalothecium roseum	154	USSR
Chaetomium globosum	154	USSR
Echinobotryum atrum	154	USSR
Mucor globosus	154	USSR
Penicillium expansum	154	USSR
P. granulatum	154	USSR
Rhizopus betavorus	154	USSR
Stachybotrys alternans	154	USSR
Stysanus stemonites	154	USSR
Trichoderma koningii	154	USSR
Bombax anceps		
Aspergillus flavus	49	Thailand
A. niger	49	Thailand
A. terreus	49	Thailand
Curvularia lunata	49	Thailand
C. pallescens	49	Thailand
Mucor spp.	49	Thailand
Penicillium spp.	49	Thailand
***Bombax ceiba* L.**		
Actinomycetes spp.	266	India
Alternaria tenuis	196	Bangladesh
Aspergillus spp.	266	India
A. flavus	196	Bangladesh
A. glaucus	196	Bangladesh
A. niger	196	Bangladesh
A. ochraceus	196	Bangladesh
Botryodiplodia spp.	266	India
Chaetomium spp.	266	India
Curvularia lunata	196	Bangladesh
Fusarium spp.	266	India
F. equiseti	170	India
F. semitectum	170	India
F. solani	170	India
Mucor spp.	266	India
Penicillium spp.	196, 266	India, Bangladesh
Phoma sp.	170	India
Rhizopus spp.	196, 266	India, Bangladesh
Thielavia spp.	266	India
***Calamus ornatus* Blume ex Schult.**		
Aspergillus flavus	73, 237	Philippines
Fusarium solani	73, 237	Philippines
***Callistemon viminalis* G. Don ex. Loud.**		
Pestalotia sp.	170	India
***Carica papaya* L.**		
Aspergillus niger	293	India
A. flavus	293	India
A. versicolor	293	India
Alternaria alternata	293	India
A. tenuissima	293	India
Cephalosporium sp.	293	India
Cladosporium cladosporoides	293	India

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
C. herbarum	293	India
Colletotrichum sp.	293	India
C. dematium	118	India
Curvularia lunata	293	India
Fusarium oxysporum	293	India
Phoma sp.	293	India
Sterile mycelia	293	India
***Carpinus eximia* Nakai**		
Botrytis cinerea	170	South Korea
Fusarium semitectum	170	South Korea
***Carya* spp.**		
Cladosporium effusum	218	USA
***Cassia acutifolia* Delile**		
Fusarium semitectum	170	Egypt
Cassia bakeriana		
Alternaria tenuis	49	Thailand
Aspergillus nidulans	49	Thailand
A. niger	49	Thailand
A. restrictus	49	Thailand
Cladosporium sp.	49	Thailand
Curvularia lunata	49	Thailand
Fusarium moniliforme	49	Thailand
Gilmaniella sp.	49	Thailand
Monilia sp.	49	Thailand
Penicillium spp.	49	Thailand
Pestalotiopsis sp.	49	Thailand
***Cassia fistula* L.**		
Alternaria tenuis	183	India
Aspergillus flavus	183, 49	India, Thailand
A. fumigatus	183	India
A. niger	183, 49	India, Thailand
A. ochraceous	183	India
A. sulphureous	183	India
Botrytis cinerea	170	India
Fusarium semitectum	170	India
Memnoniella echinata	183	India
Mucor sp.	183	India
Penicillium sp.	49, 183	India, Thailand
P. canadense	183	India
Phoma sp.	49	Thailand
Rhizopus sp.	49	Thailand
R. oryzae	183	India
Syncephalastrum racemosum	49	Thailand
***Cassia floribunda* Cav.**		
Aspergillus tamarii	49	Thailand
Curvularia pallescens	49	Thailand
***Cassia siamea* Lam.**		
Aspergillus flavus	49, 73, 237	Philippines, Thailand
A. niger	49, 73, 237	Philippines, Thailand
A. terreus	49	Thailand
Chaetomium sp.	73, 237	Philippines, Thailand
Cladosporium cladosporoides	73, 237	Philippines
Corynospora sp.	49	Thailand
Curvularia affinis	49	Thailand
C. lunata	49	Thailand
Fusarium moniliforme	73, 237	Philippines
F. semitectum	73, 237	Philippines
F. solani	73, 237	Philippines
Memnoniella echinata	49	Thailand
Macrophomina phaseolina	73	Philippines
Penicillium sp.	49, 73, 237	Philippines, Thailand
Phoma sp.	73	Philippines
Phomopsis sp.	49, 237	Philippines, Thailand
***Castanea* spp.**		
Ceratocystis fagacearum	15	Italy
Ciboria batschiana	71	France
Cryptodiaporthe castanea	308, 336	North America, Brazil
Dothiorella sp.	308, 336	North America, Brazil
Endothia parasitica	70	France, USA*
Phomopsis endogena	55	Italy
P. viterbensis	46, 55	Italy
Castanea sativa		
Ciboria batschiana	75	France
***Casuarina equisetifolia* L. ex J.R. & G. Forst.**		
Aspergillus flavus	73, 237	Philippines
A. niger	49, 73, 237	Philippines, Thailand
Botryodiplodia sp.	170	Philippines
B. theobromae	73, 237	Philippines
Chaetomium sp.	237	Philippines
Cladosporium spp.	49, 73	Thailand, Philippines
C. cladosporoides	237	Philippines
Curvularia brachyspora	237	Philippines
C. lunata	49, 73, 237	Philippines, Thailand
C. pallescens	73, 237	Philippines
Fusarium moniliforme	73, 237	Philippines
Macrophomina phaseolina	73, 237	Philippines
Penicillium spp.	73, 237	Philippines
Pestalotia sp.	170	Philippines
Pestalotiopsis sp.	36	Mauritius
Phoma sp.	170	Philippines
Phomopsis casuarinae	36	Australia
Stemphylium botryosum	170	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Cedrela odorata* L.**		
Colletotrichum sp.	170	Colombia*
Fusarium moniliforme	170	Colombia*
F. semitectum	170	Colombia*
F. solani	170	Colombia*
Macrophomina phaseolina	170	Colombia*
Phoma sp.	170	Colombia*
***Cedrela serrata* Royle.**		
Phoma sp.	170	India
***Cedrela serrulata* Miq.**		
Pestalotia sp.	170	Rwanda
Phoma sp.	170	Rwanda
***Cedrela toona* Roxb.**		
Botrytis cinerea	170	India
Fusarium moniliforme	170	India
***Cedrus deodara* (Roxb.) Loud.**		
Alternaria tenuis	168, 179, 198	India, Uruguay
Aspergillus candidus	179	India
A. flavus	179, 198	India
A. fumigatus	179	India
A. koningii	179	India
A. luchuensis	179	India
A. niger	179, 198	India
A. sydowi	179	India
A. versicolor	179	India
Cephalosporium sp.	179	India
C. roseogriseum	179	India
Chaetomium spp.	179	India
C. bostrychodes	198	India
C. globosum	198	India
Cladosporium cladosporoides	179	India
C. herbarum	179	India
Coniothecium sp.	198	India
C. atrum	198	India
Coprinus sp.	198	India
Curvularia spp.	198	India
C. maculans	179	India
C. pallescens	198	India
Epicoccum purpurascens	179	India
Fusarium bostrychodes	79	
F. bulbigenum var. *blasticola*	198	India
F. moniliforme	79, 179	India
F. moniliforme var. *minus*	198	India
F. oxysporum var. *aurantiacum*	198	India
F. sporotrichioides	198	India
Helminthosporium sp.	198	India
Memnoniella echinata	198	India
Mucor spp.	198	India
M. globosus	198	India
M. hiemalis	198	India
Oedocephalum glomerulosum	198	India
O. lineatum	198, 79	India
Penicillium spp.	198	India
P. albicans	179	India
P. canadense	179	India
P. granulatum	179	India
P. restrictum	179	India
P. wortmanii	179	India
Pestalotia sp.	198	India
Phoma glomerata	198	India
P. hibernica	198	India
Rhizoctonia sp.	179	India
Rhizopus arrhizus	198	India
R. stolonifer	179	India
R. oryzae	179	India
Stachybotrys atra	198	India
S. parvispora	179	India
Stemphylium botryosum	198	India
Stilbella nanum	198	India
Trichoderma viride	198	India
Trichothecium roseum	168	Uruguay
White, sterile fungus	198	India
General control	199, 179	India
***Chamaecyparis* spp.**		
Pestalotiopsis sp.	133	Japan
***Chamaecyparis obtusa* (Sieb. et Zucc.) Endl.**		
Arthrinium sp.	170	South Korea
Drechslera rostrata	170	South Korea
Fusarium solani	170	South Korea
Monilia sp.	170	South Korea
Pestalotia sp.	170	South Korea
***C. lawsoniana* (A. Murr.) Parl.**		
Camarosporium sp.	195, 262	France, Italy
Coniothyrium spp.	195, 262	France, Italy
Pestalotiopsis funerea	195, 262	France, Italy
Seiridium cardinale	195, 262	France, Italy
***Chukrasia tabularis* Juss.**		
Fusarium moniliforme	170	India
Macrophomina sp.	170	India
Phoma sp.	170	India
***Citrus* spp.**		
Citrus exocortis virus	256	Brazil
Citrus psorosis virus	40, 234, 54, 79	USA, USSR, Argentina
Citrus wood pocket virus	44	USA
Citrus xyloporosis virus	83, 53	Cyprus, USA
Citrus yellow shoot virus	161	North Carolina
Deuterophoma tracheiphila	297	USSR
Phoma sp.	239	Rumania
Phytophthora citrophthora	39, 151, 152	USA*
P. nicotianae var. *parasitica*	39, 151, 152	USA*

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Spiroplasma citri	58, 69, 220	
Stem pitting virus	323	Corsica§
Xanthomonas citri	157, 164	USA, India*†
General control	103, 255	
Cocos nucifera L.		
Botryodiplodia theobromae	200	India
Cephalosporium sp.	170	Japan
Diplodia palmicola	334	West Germany
Fusarium semitectum	170	Japan
F. solani	170	Japan
Marasmiellus sp.	284	Malaysia*
M. cocophilus	19, 134	Solomon Islands*
M. semiustus	281	Malaysia
Monilia sp.	170	Japan
Rhadinaphelenchus cocophilus	16, 17	Africa, USA, West Indies
Rigidoporus zonalis	134	Solomon Islands
Root wilt pathogen	226	India
Coffea spp.		
Cercospora coffeicola	217, 328	USA
Glomerella cingulata	217, 33, 125	East Africa, Brazil
Hemileia vastatrix	51	Brazil*
Koleroga noxia	217	Brazil
Nematospora coryli	217	Brazil
General control	94	Nigeria
Coffea excelsa		
Coffee ring spot virus	245	Philippines
Coniferae		
Iodophanus carneus	132, 246	UK
General control	7, 252, 253, 26, 321, 250, 117, 224	
Cordia alliodora Cham.		
Botryodiplodia theobromae	170	Colombia*
Fusarium moniliforme	170	Colombia*
F. semitectum	170	Colombia*
Phoma sp.	170	Colombia*
Phomopsis sp.	170	Colombia*
Corylus avellana L.		
Macrophoma corylina	201	Denmark
Sclerotinia laxa	166	Italy
Cryptomeria japonica D. Don		
Phoma sp.	170	Madagascar

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Cupressus spp.		
Fusarium equiseti	170	Syria
Nigrospora sp.	170	Syria
Pestalotia sp.	170	Madagascar
Phoma sp.	170,	Syria, Madagascar
Seiridium cardinale	261	Italy
Cupressus abramsiana C.B. Wolf		
Camarosporium sp.	262	Italy, France
Coniothyrium spp.	262	Italy, France
Pestalotiopsis funerea	262	Italy, France
Seiridium cardinale	262	Italy, France
Cupressus arizonica Greene		
Alternaria sp.	251	Uruguay
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Macrophomina sp.	251	Uruguay
Pestalotiopsis funerea	262	France, Italy
Seiridium cardinale	262	France, Italy
Cupressus cashmeriana Royle. ex. Carr.		
Pestalotia sp.	170	India
Phoma sp.	170	India
Cupressus funebris Endl.		
Pestalotiopsis funerea	251	Uruguay
Cupressus glabra Sudn.		
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Pestalotiopsis funerea	262	France, Italy
Seiridium cardinale	262	France, Italy
Cupressus goveniana Gord.		
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Pestalotiopsis funerea	262	France, Italy
Seiridium cardinale	262	France, Italy
Cupressus lusitanica Mill.		
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Pestalotia sp.	170	India, Kenya
Pestalotiopsis funerea	262	France, Italy
Phoma sp.	170	India
Seiridium cardinale	262	France, Italy
Cupressus lusitanica var. _benthamii_ (Endl.) Carr.		
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Pestalotiopsis funerea	262	France, Italy
Seiridium cardinale	262	France, Italy

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Cupressus macrocarpa* Hartw.**		
Alternaria sp.	251	Uruguay
Pestalotiopsis guepini	251	Uruguay
Seiridium cardinale	193	Italy*
***Cupressus sempervirens* L.**		
Alternaria alternata	92	Egypt
Aspergillus occuleatus	92	Egypt
A. versicolor	92	Egypt
Botryodiplodia palmarum	92	Egypt
Camarosporium sp.	262, 195	France, Italy
Cladosporium cladosporoides	92	Egypt
Coniothyrium spp.	195, 262	France, Italy
Fusarium sp.	92	Egypt
F. oxysporum	92	Egypt
Penicillium citrinum	92	Egypt
P. cyclopium	92	Egypt
Pestalotiopsis funerea	195, 262	France, Italy
Rhizoctonia sp.	92	Egypt
Seiridium cardinale	262, 193, 195	France, Italy
Stemphylium vesicarium	92	Egypt
***Cupressus torulosa* Don.**		
Alternaria sp.	251	Uruguay
Camarosporium sp.	262	France, Italy
Coniothyrium spp.	262	France, Italy
Dendrophoma sp.	251	Uruguay
Pestalotiopsis funerea	262	France, Italy
Seiridium cardinale	262	France, Italy
Dalbergia cochinchinensis		
Aspergillus flavus	49	Thailand
A. niger	49	Thailand
Botryodiplodia theobromae	49	Thailand
Chaetomium sp.	49	Thailand
Colletotrichum gloeosporioides	49	Thailand
Mucor sp.	49	Thailand
***Dalbergia sissoo* Roxb.**		
Alternaria tenuis	184	India
Aspergillus flavus	184	India
A. niger	184	India
A. ochraceous	184	India
Fusariella indica	184	India
Fusarium sp.	184	India
F. moniliforme	170	Madagascar, India
F. solani	170	Madagascar
Helminthosporium sp.	184	India
Humicola grisea	184	India
Memnoniella echinata	184	India
Penicillium italicum	184	India
Phoma sp.	184	India
Pythiopsis intermedia	184	India
Rhizopus oryzae	184	India
***Delonix regia* (Bo). ex Hook.) Raf.**		
Aspergillus sp.	170	Brazil
Cephalosporium sp.	73	Philippines
Chaetomium sp.	173, 237	Philippines
Cladosporium sp.	73	Philippines
C. cladosporoides	237	Philippines
Curvularia lunata	73	Philippines
Fusarium equiseti	170	Brazil
F. semitectum	73, 170	Brazil
Penicillium sp.	73	Philippines
Phoma sp.	170	Brazil, India
***Diospyros kaki* L.**		
Nigrospora spherica	170	South Korea
Penicillium sp.	208	India*
Penicillium clavariaeformis	209	India
Pestalotia diospyri	170	South Korea
Phoma sp.	170	South Korea
Dryobalanops aromatica		
Haplosporella dryobalanopsis	292	Malaysia
***Elaeis guineensis* Jacq.**		
Fusarium oxysporum f. sp. *elaeidis*	165, 265	Africa, Surinam, Colombia
Schizophyllum commune	311	Malaysia*
***Endosperum peltatum* Merr.**		
Cephalosporium sp.	2	Philippines
Cladosporium sp.	2	Philippines
Fusarium moniliforme	2	Philippines
F. solani	2	Philippines
***Enterolobium contortisiliqum* Morong**		
Alternaria sp.	251	Uruguay
***Eucalyptus* spp.**		
Acremonium strictum	240	India
Acrostaphylus lignicola	240	India
Alternaria alternata	265	India
Aspergillus candidus	240	India
A. flaviceps	240	India

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
A. flavus	240, 265	India
A. niger	240, 265	India
A. nidulans	240	India
A. sydowi	240	India
A. terreus	240	India
A. unguis	240	India
Botrytis cinerea	265	India
Cladosporium cladosporoides	265	India
C. herbarum	240, 265	India
C. tennuisium	240	India
Chaetomium globosum	265	India
Curvularia geniculata	240	India
C. lunata	240, 265	India
C. pallescens	240, 265	India
C. verruculosa	265	India
Cylindrocladium braziliensis	68	Brazil*
Drechslera australiense	265	India
D. halodes	240	India
D. rostrata	265	India
Fusarium equiseti	265	India
F. moniliforme	240, 265	India
F. oxysporum	265	India
F. poae	265	India
F. semitectum	265	India
Helminthosporium tetramera	265	India
Macrophomina phaseolina	265	India
Memnoniella echinata	240	India
Mucor hiemalis	265	India
Myrothecium roridum	265	India
Penicillium chysogenum	265	India
P. citrinum	240	India
P. frequentens	265	India
P. wortmanii	265	India
Periconia spp.	265	India
Pestalotiopsis mangiferae	240	India
Pithomyces maydicus	240	India
Phoma sp.	240	India
Pleospora infectoria	265	India
Ramularia sp.	81	Queensland
Rhizopus arrhizus	265	India
Stachybotrys atra	265	India
S. chartarum	240	India
Trichothecium roseum	265	India
Verticillium albo-atrum	275	India
General control	78	
***Eucalyptus alba* Reinw. exbl.**		
Aspergillus flavus	49	Thailand
A. niger	49	Thailand
Bacteria	49	Thailand
Curvularia sp.	49	Thailand
C. pallescens	49	Thailand
Paecilomyces sp.	49	Thailand
Pestalotiopsis funerea	170	India
Phoma sp.	170	India
Syncephalastrum racemosum	49	Thailand
***Eucalyptus camaldulensis* Dehn.**		
Alternaria tenuis	49	Thailand
Fusarium moniliforme	49	Thailand
F. semitectum	170	Egypt
Macrophoma sp.	49	Thailand
Phoma sp.	170	India
***Eucalyptus citriodora* Hook. f.**		
Aspergillus sp.	266	India
A. candidus	186	India
A. flavus	186	India
A. fumigatus	186	India
A. koningii	186	India
A. luchuensis	186	India
A. niger	186	India
A. sulphureus	186	India
A. sydowi	186	India
A. tamarii	186	India
Botryotrichum sp.	186	India
Cephalosporium sp.	266	India
Chaetomium homopilatium	186	India
Chaetomium sp.	266	India
Cladosporium sp.	186	India
Colletotrichum sp.	266	India
Curvularia inequalis	186	India
C. pubescens	186	India
Fusarium sp.	186	India
F. solani	186	India
Fusicoccum sp.	266	India
Gliocephalotrichum sp.	266	India
Gliocladium penicilloides	186	India
Macrophoma sp.	266	India
Monocillium sp.	266	India
Paecilomyces sp.	266	India
Penicillium sp.	266	India
P. albicans	186	India
P. brefeldianum	186	India
P. canadense	186	India
P. decumbens	186	India
P. expansum	186	India
P. rubrum	186	India
P. variabile	186	India
Phomopsis sp.	266	India
Pythium sp.	186	India
Rhizopus oryzae	186	India
Trichoderma viride	186	India
General control	186	India
***Eucalyptus deglupta* Bl.**		
Aspergillus flavus	49	Thailand
A. fumigatus	49	Thailand
A. niger	49	Thailand
Cephalosporium sp.	170	Philippines
Fusarium equiseti	170	Philippines
F. oxysporum	49	Thailand
Paecilomyces sp.	49	Thailand
Penicillium sp.	2	Philippines
Pestalotia sp.	170	Philippines
Rhizopus sp.	49	Thailand
***Eucalyptus globulus* Labill.**		
Actinomycetes	267	India

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Aspergillus sp.	266	India
Cephalosporium sp.	266	India
Chaetomium sp.	266	India
Fusarium sp.	170	Portugal
Monocillium sp.	266	India
Mucor sp.	266	India
Paecilomyces sp.	266	India
Penicillium sp.	266	India
Stachybotrys sp.	266	India
Sterile mycelia	267	India
Eucalyptus grandis **Hill ex Maiden**		
Actinomycetes	267	India
Alternaria sp.	251	Uruguay
Aspergillus sp.	266	India
Botryodiplodia sp.	170	Uruguay
Curvularia sp.	251	Uruguay
C. lunata	49	Thailand
Drechslera sp.	251	Uruguay
Fusarium moniliforme	170	Uruguay
Monocillium sp.	266	India
Mucor sp.	266	India
Myrothecium roridum	170	Uruguay
Penicillium sp.	266	India
Pestalotiopsis funerea	251	Uruguay
Phoma sp.	170	India
Rhizopus sp.	251	Uruguay
Verticillium sp.	251	Uruguay
Eucalyptus **hybrid**		
Aspergillus flavus	180	India
A. fumigatus	180	India
A. niger	180	India
A. sydowi	180	India
Cladosporium cladosporoides	180	India
Curvularia pallescens	180	India
C. verruculosa	180	India
Fusarium sp.	180	India
Memnoniella echinata	180	India
Mucor sp.	180	India
Penicillium albicans	180	India
Rhizopus oryzae	180	India
Thamnostylum lucknowense	180	India
Trichoderma viride	180	India
Sterile mycelia	180	India
General control	180	India
Eucalyptus maidenii **F. Muell.**		
Alternaria sp.	251	Uruguay
Curvularia sp.	251	Uruguay
Fusarium semitectum	251	Uruguay
Penicillium sp.	251	Uruguay
Pestalotiopsis sp.	251	Uruguay
Trichoderma viride	251	Uruguay
Eucalyptus **tereticornis Sm.**		
Actinomycetes	267	India
Aspergillus sp.	266	India
Bacteria	49	Thailand
Curvularia lunata	49	Thailand
Monocillium sp.	266	India
Mucor sp.	266	India
Penicillium sp.	266	India
Phoma sp.	170	India
Eucommia ulmoides **Oliver**		
Phoma sp.	170	USA
Euonymus europaeus **L.**		
Euonymus mosaic virus	34	Czechoslovakia
Fagus **spp.**		
Phytophthora cactorum	317	Czechoslovakia
Verticillium spp.	317	Czechoslovakia
Fagus sylvatica **L.**		
Alternaria tenuis	121	Hungary
Fusarium spp.	121	Hungary
Rhizoctonia solani	225	France*
Ficus benjamina **L.**		
Botryodiplodia sp.	170	India
Fusarium moniliforme	170	India
F. semitectum	170	India
Verticillium sp.	170	India
Ficus krishnaie **C. DC.**		
Cephalosporium sp.	170	India
Fraxinus **sp.**		
Macrophoma fraxini	231	Czechoslovakia
Phyllosticta osteospora var. *samaricola*	232	USSR
Fraxinus americana **L.**		
Alternaria tenuis	98, 99	USA
Aspergillus spp.	98, 99	USA
Botrytis cinerea	98, 99	USA
Cephalosporium sp.	98, 99	USA
Chaetomium funicola	98, 99	USA
C. globosum	98, 99	USA
Coniothyrium sp.	98, 99	USA
Epicoccum purpurascens	98, 99	USA
Fusarium sp.	98, 99	USA
Geotrichum sp.	98, 99	USA
Helminthosporium sp.	98, 99	USA
Hormodendron sp.	98, 99	USA

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Mucor sp.	98, 99	USA
Penicillium spp.	98, 99	USA
Phomopsis sp.	98, 99	USA
Physalospora obtusa	98, 99	USA
Pleospora sp.	98, 99	USA
Rhizopus sp.	98, 99	USA
Sordaria fumicola	98, 99	USA
Tricoderma viride	98, 99	USA
White, sterile fungi	98, 99	USA
***Ginkgo biloba* L.**		
Virus	288	Czechoslovakia, Hungary
***Gliricidia sepium* (Jacq.) Kunth ex Walp.**		
Aspergillus flavus	73	Philippines
A. niger	73	Philippines
Penicillium sp.	73	Philippines
***Gmelina arborea* Roxb.**		
Alternaria tenuis	49	Thailand
Aspergillus sp.	2	Philippines
A. flavus	49, 73, 237	Philippines, Thailand
A. niger	49, 73, 237	Philippines, Thailand
Botrytis cinerea	170	Philippines
Cephalosporium sp.	170	India
Fusarium equiseti	170	India
F. moniliforme	170	India
F. semitectum	170	India
F. solani	170	India
Penicillium spp.	49, 73, 237	Philippines, Thailand
Phoma sp.	170	India
Rhizopus sp.	49	Thailand
Syncephalastrum racemosum	49	Thailand
***Gmelina mollucana* Bocker ex K. Heyne**		
Cephalosporium sp.	170	Solomon Islands
Fusarium semitectum	170	Solomon Islands
***Grevillea robusta* A. Cunn.**		
Botryodiplodia theobromae	170	Rwanda*
Discocia sp.	170	Rwanda*
Fusarium equiseti	170	Rwanda*
F. moniliforme	170	Rwanda*
F. semitectum	170	Rwanda*
F. solani	170	Rwanda*
Pestalotia sp.	170	Rwanda*
***Hevea* sp.**		
Botryodiplodia theobromae	84	Malaysia
Phomopsis hevea	84	Malaysia
***Hevea brasiliensis* Muell.-Arg.**		
Botryodiplodia theobromae	295	India*†
Microcyclus ulei	52	South and Central America, Caribbean*
Phomopsis hevea	294	Malaysia
Phytophthora botryosa	207	Malaysia§
General control	162	Malaysia
***Holarrhana antidysenterica* Wall. ex A.Dc.**		
Aspergillus niger	49	Thailand
A. restrictus	49	Thailand
Botryodiplodia theobromae	49	Thailand
Chaetomium sp.	49	Thailand
Curvularia affinis	49	Thailand
C. geniculata	49	Thailand
Drechslera tetramera	49	Thailand
***Horenia dulcis* Thunb.**		
Phoma sp.	170	India
***Horsfeldia* sp.**		
Cylindrocladium scoparium	275	Malaysia
***Howeia forsteriana* Becc.**		
Dothiorella sp.	12	North America
***Jacaranda mimosaefolia* D. Don**		
Botrytis cinerea	170	India
Drechslera sp.	170	India
Fusarium moniliforme	170	India
Phoma sp.	170	India
***Juglans* spp.**		
Alternaria nucis	211	Czechoslovakia, Romania
Cherry leaf roll virus	62, 63, 177, 236	Italy, UK, USA
Erwinia sp.	238	
Gnomonia leptostyla	28, 174	USA

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Pseudomonas sp.	238	
Xanthomonas juglandis	5, 89	Romania, Italy
Prune necrotic ring virus	22	Italy
***Juniperus coreana* Nakai**		
Fusarium moniliforme	170	South Korea
***Juniperus virginiana* L.**		
Phomopsis occulta	204	Denmark
***Kydia calycina* Roxb.**		
Fusarium moniliforme	170	India
F. semitectum	170	India
Phoma sp.	170	India
Lagerstroemia calyculata		
Aspergillus niger	49	Thailand
A. restrictus	49	Thailand
Curvularia lunata	49	Thailand
Penicillium sp.	49	Thailand
***Lagerstroemia speciosa* (L.) Pers.**		
Aspergillus flavus	73, 237	Philippines
Cephalosporium sp.	237	Philippines
Cladosporium sp.	237	Philippines
Penicillium sp.	73, 237	Philippines
Phoma sp.	170	India
***Larix* spp.**		
Cytospora curreyi	210	UK
Phoma lineolata	210, 163, 203	UK, USA, Denmark
Phomopsis occulta	202	Denmark
***Larix decidua* Mill.**		
Acrostalagmus cinnabarinus	154	USSR
Alternaria tenuis	154	USSR
Aspergillus niger	154	USSR
Botrytis cinerea	154	USSR
Cephalothecium roseum	154	USSR
Fusarium oxysporum	154	USSR
Penicillium granulatum	154	USSR
Stachybotrys alternans	154	USSR

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Larix sibirica* Ledeb.**		
Alternaria circinans	233	USSR
A. iridicola	233	USSR
A. peponis	233	USSR
A. radicina	233	USSR
A. tenuis	233	USSR
Aspergillus candidus	233	USSR
A. flavus	233	USSR
A. niger	233	USSR
A. ochraceus	233	USSR
Cladosporium herbarum	233	USSR
Fusarium avenaceum	233	USSR
F. oxysporum	233	USSR
Helotium strobilinum	233	USSR
Hormiscium stilbosporum	233	USSR
Hypoderma conigenum	233	USSR
Monilia sitophyla	233	USSR
Mucor albo-ater	233	USSR
M. mucedo	233	USSR
M. plumbeus	233	USSR
M. racemosus	233	USSR
Penicillium expansum	233	USSR
Propolis faginea	233	USSR
Pullularia pullulans	233	USSR
Rhizopus nigricans	233	USSR
Spicaria elegans	233	USSR
Trichoderma lignorum	233	USSR
Thamnidium elegans	233	USSR
***Leucaena* spp.**		
Botryodiplodia sp.	170	Philippines
Fusarium moniliforme	170	Philippines
F. semitectum	170	Philippines
F. solani	170	Philippines
Macrophomina sp.	170	Philippines
Phoma sp.	170	Philippines
Rhizoctonia solani	170	Philippines
***Leucaena cunningham* Benth.**		
Fusarium moniliforme	170	Malawi
***Leucaena diversifolia* Benth.**		
Fusarium moniliforme	170	Guatemala*
Macrophomina phaseolina	170	Guatemala*
Phoma sp.	170	Guatemala*
Phomopsis sp.	170	Guatemala*
***Leucaena latisiliqua* (L.) Gillis**		
Fusarium moniliforme	170	Philippines
***Leucaena leucocephala* (Lam.) de Wit**		
Aspergillus sp.	2	Philippines
A. candidus	49	Thailand
A. flavus	237	Philippines
A. fumigatus	49	Thailand
A. niger	49, 237	Philippines, Thailand
A. tamarii	49	Thailand

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Bacteria	49	Thailand
Botryodiplodia theobromae	237	Philippines
Cephalosporium sp.	170	Philippines
Cladosporium sp.	2	Philippines
C. cladosporoides	237	Philippines
Colletotrichum gloeosporoides	237, 276	Philippines, Malaysia
C. graminicola	237	Philippines
Curvularia lunata	49	Thailand
Drechslera hawaiiensis	49	Thailand
D. tetramera	2	Philippines
Fusarium moniliforme	170	Philippines, Malaysia*
F. semitectum	2, 285	Philippines, India*
F. solani	237	Philippines
Penicillium sp.	2, 49	Philippines, Thailand
Pestalotia sp.	170	Philippines
Phoma sp.	237	Philippines
Rhizopus sp.	49	Thailand
***Leucaena leucocephala* var. *cunninghami* Benth.**		
Phoma sp.	170	Cuba
***Libocedrus decurrens* Torr.**		
Pestalotiopsis funerea	128	UK
***Liriodendron tulipifera* L.**		
Gloeosporium sp.	1	USA†
***Lobelia erinus* L.**		
Alternaria tenuis	119	UK*
***Maesopsis eminii* Engl. Musizi**		
Cylindrocladium scoparium	275, 276	Malaysia
Fusarium sp.	276	Malaysia
Phoma sp.	276	Malaysia
***Malelenca* spp.**		
Fusarium semitectum	13	India
***Malus* spp.**		
Chaetomium sp.	171	
Pestalotia sp.	172, 239	Denmark, Romania, Australia
Raspberry bushy dwarf virus	43	UK
Tobacco mosaic virus	111	USA
Tomato bushy stunt virus	6, 146, 147	Canada, East Germany
General control	338	
***Mangifera indica* L.**		
Glomerella cingulata	289	
***Melia azedarach* L.**		
Aspergillus flavus	49	Thailand
A. niger	49	Thailand
Bacteria	49	Thailand
Botryodiplodia theobromae	49	Thailand
Curvularia lunata	49	Thailand
Drechslera rostrata	49	Thailand
Penicillium spp.	49	Thailand
Phomopsis sp.	49	Thailand
***Mimosa caesalpiniafolia* Benth.**		
Cephalosporium sp.	170	Brazil
Fusarium moniliforme	170	Brazil
F. semitectum	170	Brazil
Pestalotia sp.	170	Brazil
Phoma sp.	170	Brazil
Septoria sp.	170	Brazil
***Mimosa scabrella* Benth.**		
Fusarium moniliforme	170	Brazil
F. oxysporum	170	Brazil
F. semitectum	170	Brazil
***Morus* spp.**		
Ciboria carunculoides	280, 330	
Microglossum shiraianum	280, 330	
Sclerotinia shiraiana	280, 330	USA
General control	50	
***Musa* spp.**		
Botryodiplodia theobromae	112	Panama, Honduras, Malaysia
Virus	113	USA
***Musanga cecropoides* R. Br.**		
Cladosporium cladosporoides	2	Philippines
Cutvularia lunata	2	Philippines
Macrophomina phaseolina	2	Philippines
Penicillium sp.	2	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Nothofagus* spp.**		
Mycogone sp.	24	UK
Truncatella hartigii	24	UK
***Ougeinia dalbergioides* Benth.**		
Phoma sp.	170	
***Parkia roxburgii* G. Don**		
Aspergillus flavus	73, 237	Philippines
Chaetomium sp.	73, 237	Philippines
Penicillium sp.	73, 237	Philippines
Parrotia persica		
Pestalotia parrotiae	4	USSR
***Pentaclethra macrophylla* Benth.**		
Bacillus cereus	213	Nigeria
B. circulans	213	Nigeria
B. licheniformis	213	Nigeria
B. macerans	213	Nigeria
Leuconostoc mesenteroides	213	Nigeria
Micrococcus luteus	213	Nigeria
M. roseus	213	Nigeria
Staphylococcus epidermidis	213	Nigeria
***Persea americana* Mill.**		
Phytophthora cinnamomi	59, 82, 222	USA*§, Australia*
Rhizoctonia solani	178	USA
Sunblotch virus	42, 219, 306, 326	USA, Africa, New Zealand, Australia
***Picea* spp.**		
Caloscypha fulgens (=*Geniculodendron pyriforme*)	88 259, 260, 304, 335	Canada*, UK
Pucciniastrum areolatum	20	West Germany
Sirococcus strobilinus	302	Canada
Verticillium sp.	259	England
***Picea abies* (L.) Karst**		
Alternaria circinans	233	USSR
A. iridicola	233	USSR
A. peponis	233	USSR
A. radicina	233	USSR
A. tenuis	233	USSR
Ascochyta conorum	233	USSR
Aspergillus candidus	233	USSR
A. flavus	233	USSR
A. glaucus	233	USSR
A. niger	233	USSR
A. ochraceus	233	USSR
Caloscypha fulgens	114, 123	UK, USA, Canada
Chettostylum fresenii	233	USSR
Chrysomyxa pirolae	233	USSR
C. voronini	233	USSR
Cladosporium herbarum	233	USSR
Coniothyrium conicola	233	USSR
Diplodia conigena	233	USSR
Fusarium avenaceum	233	USSR
F. equiseti	233	USSR
F. solani	233	USSR
F. sporotrichioides	233	USSR
Helotium virgultorum	23	USSR
Hypoderma conigenum	233	USSR
Hormiscium stilbosporum	233	USSR
Marasmium reenbans	233	USSR
Monilia sitophyla	233	USSR
Mucor albo-ater	233	USSR
M. mucedo	233	USSR
M. plumbeus	233	USSR
M. racemosus	233	USSR
Ombrophila strobilina	233	USSR
Penicillium candidum	233	USSR
P. expansum	233	USSR
Pullularia pullulans	233	USSR
Rhizopus stolonifer	233	USSR
Sirococcus strobilinus	302	Canada
Sordaria fimicola	233	USSR
Spicaria elegans	233	USSR
Thamnidium elegans	233	USSR
Thecospora padi	233	USSR
Trichoderma lignorum	233	USSR
Typhula peronata	233	USSR
Verticillium sp.	128	UK
V. glaucum	233	USSR
***Picea engelmannii* Parry ex Engelm.**		
Alternaria sp.	100	USA
Aspergillus sp.	100	USA
Aureobasidium sp.	100	USA
Bacteria	100	USA
Caloscypha fulgens	123, 300, 299, 331, 298	Canada, USA
Cladosporium sp.	100	USA
Mucor sp.	100	USA
Penicillium sp.	100	USA
Rhizopus sp.	100	USA
Sirococcus strobilinus	301, 302, 136, 210	USA, Canada
Trichoderma sp.	100	USA
Sterile fungi	100	USA

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Picea excelsa* Link**		
Acremoniella atra	315	Czechoslovakia
Acrostalagmus cinnabarinus	315	Czechoslovakia
Alternaria brassicae	315	Czechoslovakia
A. tenuis	315	Czechoslovakia
Aspergillus flavus	315	Czechoslovakia
A. niger	315	Czechoslovakia
A. oryzae	315	Czechoslovakia
Bacillus mycoides	223	Yugoslavia
B. subtilis	223	Yugoslavia
Botrytis allii	315	Czechoslovakia
B. cinerea	315	Czechoslovakia
Cephalosporium acremonium	315	Czechoslovakia
C. subverticillatum	315	Czechoslovakia
Chaetomium globosum	315	Czechoslovakia
Cladosporium epiphyllum	315	Czechoslovakia
C. herbarum	315	Czechoslovakia
C. naumovi	315	Czechoslovakia
C. sphaerospenum	315	Czechoslovakia
Coniosporium aterrimum	315	Czechoslovakia
Coniothyrium quercinum	315	Czechoslovakia
Curvularia inequalis	315	Czechoslovakia
Cylindrocarpon radicicola	315	Czechoslovakia
Fusarium arthrosporioides	315	Czechoslovakia
F. culmorum	315	Czechoslovakia
F. heterosporum	315	Czechoslovakia
F. lateritium	315	Czechoslovakia
F. moniliforme	315	Czechoslovakia
F. oxysporum	315	Czechoslovakia
F. redolens	315	Czechoslovakia
F. sarcochrum	315	Czechoslovakia
F. semitectum	315	Czechoslovakia
F. solani	315	Czechoslovakia
F. sporotrichioides	315	Czechoslovakia
Gliocladium roseum	315	Czechoslovakia
Helminthosporium rostratum	315	Czechoslovakia
H. sativum	315	Czechoslovakia
Melanconium apiocarpon	315	Czechoslovakia
M. bicolor	315	Czechoslovakia
Mucor plumbeus	315	Czechoslovakia
M. racemosus	315	Czechoslovakia
M. ramanianus	315	Czechoslovakia
Oospora verticilloides	315	Czechoslovakia
Ophiostoma sp.	315	Czechoslovakia
Paecilomyces varioti	315	Czechoslovakia
Penicillium arenarium	315	Czechoslovakia
P. chrysogenum	315	Czechoslovakia
P. crustaceum	315	Czechoslovakia
P. divergens	315	Czechoslovakia
P. roqueforti	315	Czechoslovakia
Pestalotia glandicola	315	Czechoslovakia
P. quercina	315	Czechoslovakia
Pseudomonas fluorescens	223	Yugoslavia
P. herbicola	223	Yugoslavia
Pullularia sp.	315	Czechoslovakia
Rhizopus arrhizus	315	Czechoslovakia
Stemphylium atrum	315	Czechoslovakia
S. ilicis	315	Czechoslovakia
S. piriforme	315	Czechoslovakia
Torula convoluta	315	Czechoslovakia
Trichoderma lignorum	315	Czechoslovakia
Trichothecium roseum	315	Czechoslovakia
Verticillium albo-atrum	315	Czechoslovakia
***Picea glauca* (Moench) Voss**		
Alternaria alternata	192, 190	Canada
Aureobasidum pullulans	192	Canada
Caloscypha fulgens	88, 298	Canada
Cladosporium cladosporoides	192	Canada
C. herbarum	192	Canada
Epicoccum purpurascens	192	Canada
Fusarium oxysporum	190	Canada
F. sporotrichioides	192	Canada
Monochaetia sp.	192	Canada
Mucor hiemalis	192	Canada
Paecilomyces sp.	192	Canada
Papulaspora sp.	192	Canada
Penicillium aurantiogriseum	192	Canada
P. thomii	192	Canada
P. variabile	190	Canada
Rhizopus nigricans	192	Canada
Sirococcus strobilinus	302	Canada
Trichoderma koningii	192	Canada
T. viride	192	Canada
Trichothecium roseum	192	Canada
Ulocladium atrum	192	Canada
Picea glauca* x *P. engelmannii		
Caloscypha fulgens	298	Canada
Sirococcus strobilinus	302	Canada
***Picea sitchensis* (Bong.) Carr.**		
Alternaria sp.	258	UK
Aspergillus sp.	258	UK
Caloscypha fulgens	258, 123	UK, USA
Ceratobasidium spp.	258	UK
Chaetomium spp.	258	UK
Cylindrocarpon spp.	258	UK
Epicoccum sp.	258	UK
Fusarium spp.	258	UK
Gliocladium roseum	258	UK
Humicola sp.	258	UK
Mucor spp.	258	UK
Penicillium spp.	258	UK
Phialophora sp.	258	UK
Rhizoctonia solani	258	UK
Rhizopus spp.	258	UK
Sirococcus strobilinus	302	Canada
Stemphylium sp.	258	UK
Trichoderma sp.	258	UK
Verticillium sp.	258	UK
Sterile fungi	258	UK
***Piliostigma malabaricum* Benth.**		
Aspergillus flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Chaetomium sp.	237	Philippines
Fusarium moniliforme	73	Philippines
F. semitectum	73, 237	Philippines
F. solani	73	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Penicillium sp.	73, 237	Philippines
Pinus spp.		
Diplodia pinea	11, 242	UK, USA
Geniculodendron pyriforme	260	UK
Lophodermium pinastri	210	UK, North America
Pestalotiopsis funerea	128	UK
Phoma sp.	170	Japan
General	130, 155, 244	Japan
Pinus armaandii var. masteriana		
Aspergillus sp.	142	Taiwan
Bacteria	142	Taiwan
Chaetomella sp.	142	Taiwan
Curvularia sp.	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Gloeosporium sp.	142	Taiwan
Graphium sp.	142	Taiwan
Mucor sp.	142	Taiwan
Pestalotia sp.	142	Taiwan
Phoma sp.	142	Taiwan
Sphaeropsis sp.	142	Taiwan
Verticillium sp.	142	Taiwan
Sterile fungi	142	Taiwan
Pinus caribaea Morel.		
Aspergillus spp.	126	Belize
A. candidus	49	Thailand
A. flavus	49	Thailand
A. glaucus	126	Belize
A. niger	49	Thailand
Botryodiplodia sp.	170	Madagascar
B. theobromae	170, 241, 243	Guatemala, Nicaragua, Honduras*
Botryosphaeria ribis	269	UK
Botrytis cinerea	170	Cuba
Chaetomium sp.	170	Central America
Cladosporium cladosporoides	126	Belize
Colletotrichum sp.	126	UK
Curvularia geniculata	126	Belize
C. verruculosa	126	Belize
Cylindrocarpon sp.	126	Belize
Drechslera bicolor	170	Cuba
Epicoccum nigrum	126	Belize
Eurotium sp.	126	Belize
Fusarium equiseti	243	UK
F. merismoides	243	UK
F. moniliforme	126, 170, 243	Madagascar, Central America, Honduras
F. oxysporum	126, 170, 243	Cuba, Belize, UK
F. semitectum	170, 243	Cuba, UK
F. solani	170, 243	Cuba/Central America, UK
Helminthosporium sp.	126	Belize
Isaria sp.	126	Belize
Macrophomina phaseolina	170, 243	Central America, Madagascar, UK
Mucor sp.	126	Belize
M. hiemalis	126	Belize
M. rammanianus	126	Belize
Penicillium spp.	49, 126	Belize
Penicillium lapidosum	126	Belize
P. notatum	126	Belize, Thailand
Pestalotia sp.	170	Madagascar
Phoma sp.	126	Belize
Spondylocladiella sp.	126	Belize
Stemphylium sp.	126	Belize
Trichoderma sp.	126	Belize
Sterile fungi	126	Belize
Pinus caribaea var. bahamensis Barr. & Golf.		
Fusarium moniliforme	170	Brazil
Pinus caribaea var. caribaea Barr. & Golf.		
Fusarium moniliforme	170	Brazil
F. solani	170	Brazil
Pinus caribaea var. hondurensis Barr. & Golf.		
Fusarium moniliforme	170	Brazil
F. semitectum	170	Brazil
Phoma sp.	170	Brazil
Pinus contorta Dougl.		
Alternaria sp.	100	USA
Aspergillus sp.	100	USA
Aureobasidum sp.	100	USA
Bacteria	298	Canada
Caloscypha fulgens	298	Canada
Chaetomium sp.	100	USA
Cladosporium sp.	100	USA
Mucor sp.	100	USA
Paecilomyces sp.	100	USA
Penicillium sp.	100	USA
Rhizopus sp.	100	USA
Trichoderma sp.	100	USA
Sterile fungi	100	USA
Pinus elliottii Engelm.		
Aspergillus sp.	142, 66	USA, Taiwan
Bacteria	254	USA, Taiwan
Botryodiplodia sp.	170, 66	USA
Cephalosporium sp.	66, 254	Taiwan, USA
Chaetomium sp.	66, 254	Taiwan, USA
Dendrophoma sp.	66	USA
Diplodia sp.	9, 254	USA, Taiwan
Fusarium sp.	66	USA, Taiwan
F. moniliforme	170	Canada, USA
F. semitectum	170	USA
F. solani	170, 254, 254	USA
Fusicoccum sp.	254	USA

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Geotrichum sp.	66	USA
Helminthosporium sp.	254	USA
Penicillium sp.	66, 254	USA, Taiwan
Pestalotia sp.	66, 170, 254	USA
Phomopsis sp.	66	USA
Rhizoctonia sp.	254	Taiwan
Sphaeropsis sp.	66, 254	US, Taiwan
Trichoderma sp.	66	USA
Verticillium sp.	170, 254	USA, Taiwan
Sterile fungi	254	USA, Taiwan
Pinus elliottii* Engelm. var. *elliottii		
Alternaria sp.	251	Uruguay
Aspergillus sp.	251	Uruguay
Cephalosporium sp.	251	Uruguay
Chaetomium globosum	251	Uruguay
Curvularia sp.	251	Uruguay
Diplodia gossypina	175	USA
Drechslera sp.	251	Uruguay
F. moniliforme	170	Brazil
F. moniliforme var. *subglutinans*	2, 175	USA, Philippines
F. semitectum	251	Uruguay
F. solani	170	Brazil
Gliocladium sp.	251	Uruguay
Mycothypa sp.	251	Uruguay
Oedocephalum sp.	251	Uruguay
Penicillium sp.	251	Uruguay
Pestalotiopsis guepini	251	Uruguay
Rhizopus sp.	251	Uruguay
Trichoderma viride	251	Uruguay
Trichothecium roseum	251	Uruguay
Verticillium sp.	251	Uruguay
***Pinus echinata* Mill.**		
Fusarium moniliforme var. *subglutinans*	296	USA
***Pinus insularis* Endl.**		
Alternaria tenuis	2	Philippines
Cladosporium cladosporoides	2	Philippines
Drechslera maydis	2	Philippines
Fusarium moniliforme	2	Philippines
Macrophomina phaseolina	2	Philippines
Pestalotia sp.	2	Philippines
Phoma sp.	2	Philippines
Stemphylium radicinum	2	Philippines
Sterile fungi	2	Philippines
***Pinus kesiya* Royle ex Gord.**		
Aspergillus flavus-oryzae	49	Thailand
A. niger	73, 237	Philippines
A. ochraceus	49	Thailand
A. versicolor	49	Thailand
Bacteria	49	Thailand
Bispora antennata	49	Thailand
Cephalosporium acremonium	49	Thailand
Chaetomium sp.	49	Thailand
Cladosporium sp.	49	Thailand
Curvularia lunata	49	Thailand
Fusarium semitectum	73, 237	Philippines
Penicillium spp.	49, 73, 237	Philippines, Thailand
***Pinus khasya* Royle**		
Botryodiplodia sp.	170	Madagascar
Fusarium moniliforme	170	Brazil, Madagascar
F. semitectum	170	Madagascar
Pestalotia sp.	170	Zambia, Madagascar
Phoma sp.	170	Philippines, Zambia
***Pinus lambertiana* Dougl.**		
Cylindrocladium sp.	274	USA
Fusarium oxysporum	60	USA*
F. roseum	276	USA*
Mucor sp.	274	USA
Penicillium sp.	274	USA
Rhizopus sp.	274	USA
Pinus luchuensis		
Aspergillus sp.	142	Taiwan
Bacteria	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Sterile fungi	142	Taiwan
Pinus massoniana		
Aspergillus sp.	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Pestalotia sp.	142	Taiwan
Phomopsis sp.	142	Taiwan
Rhizopus sp.	142	Taiwan
Sphaeropsis sp.	142	Taiwan
Stemphylium sp.	142	Taiwan
Bacteria	412	Taiwan
***Pinus merkusii* Jungh. & de Vriese**		
Aspergillus sp.	2	Philippines
A. flavus	49	Thailand
A. fumigatus	49	Thailand
Botryodiplodia theobromae	2, 49	Philippines, Thailand
Cephalosporium sp.	2	Philippines
Curvularia lunata	49	Thailand
Fusarium equiseti	170	Zambia
F. moniliforme	2	Philippines, Zambia
F. semitectum	2	Philippines
F. solani	2	Philippines
Macrophomina phaseolina	2	Philippines
Memnoniella echinata	49	Thailand
Paecilomyces sp.	49	Thailand

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Penicillium sp.	2	Philippines
Pestalotia sp.	170	Zambia
Phoma sp.	49, 170	Zambia, Thailand
Syncephalastrum racemosum	49	Thailand
Pinus merrisonicola		
Aspergillus sp.	142	Taiwan
Bacteria	142	Taiwan
Chaetomium sp.	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Fusicoccum sp.	142	Taiwan
Gloeosporium sp.	142	Taiwan
Pestalotia sp.	142	Taiwan
Sphaeropsis sp.	142	Taiwan
Verticillium sp.	142	Taiwan
Sterile fungi	142	Taiwan
***Pinus monticola* Dougl.**		
Caloscypha fulgens	298	Canada
***Pinus nigra* Arnold**		
Alternaria spp.	120	Hungary
Aspergillus spp.	120	Hungary
Bacillus subtilis	310	Italy
Bacteria	120	Hungary
Botrytis cinerea	120	Hungary
Cladosporium herbarum	120	Hungary
Fusarium spp.	120	Hungary
Mucor spp.	120	Hungary
Penicillium spp.	120	Hungary
Rhizopus nigricans	120	Hungary
Rhizoctonia solani	310	Italy
Trichoderma spp.	99	Hungary
Trichothecium roseum	99	Hungary
Sterile mycelia	120	Hungary
***Pinus occidentalis* Sw.**		
Fusarium moniliforme		Cuba
***Pinus oocarpa* Schiede**		
Aspergillus niger	241	Honduras
Botryodiplodia theobromae	170, 243,	Central America, UK
Botryosphaeria ribis	243	UK
Chaetomium sp.	170	Central America
Colletotrichum sp.	243	UK
Fusarium equiseti	243	UK
F. merismoides var. *acetilereum*	243	UK
F. moniliforme	170, 243	Central America, India, UK
F. moniliforme var. *subglutinans*	243	UK
F. oxysporum	243	UK
F. semitectum	243	UK

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
F. solani	170, 243	Central America, UK
Macrophoma sapinea	243	UK
Pestalotia sp.	170	Zambia
Pestalotiopsis foedans	170	Central America, Zambia
Phoma sp.	170	Central America
Trichoderma spp.	241	Honduras
***Pinus palustris* Mill.**		
Fusarium moniliforme	221	USA*
F. oxysporum	221	USA*
F. roseum	221	USA
F. solani	221	USA*
F. tricinctum	221	USA
***Pinus patula* Schiede & Deppe**		
Aspergillus sp.	106	East Africa
A. tamarii	106	Kenya
Chaetomium cochliodes	106	Kenya
Cladosporium sp.	106	Kenya
Fusarium semitectum	170	Madagascar
Mucor sp.	106	East Africa
Mucor hiemalis	106	Kenya
Pestalotia sp.	170	Madagascar
Rhizopus sp.	106	East Africa
R. arrhizus	106	Kenya
Trichoderma sp.	106	East Africa
T. koeningii	106	Kenya
Trichothecium sp.	106	East Africa
***Pinus pinaster* Ait.**		
Chaetomium globosum	251	Uruguay
Fusarium moniliforme	196, 251	Uruguay, Italy
F. moniliforme var. *subglutinans*	194	Italy
F. semitectum	251	Uruguay
***Pinus ponderosa* Laws.**		
Alternaria sp.	100	USA
A. alternata	138, 139	USA
Aspergillus sp.	138, 139, 100	USA*†
Aureobasidium sp.	100	USA
A. pullulans	138, 139	USA
Bacteria	100, 138, 139	USA
Botrytis cinerea	138, 139	USA
Caloscypha fulgens	298	Canada
Cephalosporium sp.	138, 139	USA
Cladosporium sp.	100	USA
C. cucumerinum	138, 139	USA
Diplodia pinea	138, 139	USA
Fusarium oxysporum	100, 138, 139	USA*†
F. solani	138, 139	USA*†
Lacellina graminicola	138, 139	USA
Mucor sp.	100	USA
M. mucedo	138, 139	USA
Penicillium sp.	100	USA

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
P. chrysogenum	138, 139	USA*
P. claviforme	138, 139	USA*
P. expansum	138, 139	USA*
P. fuscum	138, 139	USA*
P. glabrum	138, 139	USA*
P. oxalicum	138, 139	USA*
P. viridicatum	138, 139	USA*
Phoma sp.	138, 139	USA
Pyrenochaeta sp.	138, 139	USA
Pythium aphanidermatum	138, 139	USA
Rhizopus sp.	100	USA
R. arrhizus	138, 139	USA
Trichoderma sp.	100	USA
T. viride	138, 139	USA
Trichothecium roseum	138, 139	USA*†
Ulocladium sp.	138, 139	USA
Verticillium sp.	138, 139	USA
Yeast	138, 139	USA
Sterile mycelia	100	USA
***Pinus pseudostrobus* Lindl.**		
Botryodiplodia theobromae	243	UK
Botryosphaeria ribis	243	UK
Colletotrichum sp.	243	UK
Fusarium equiseti	243	UK
F. merismoides var. *acetilereum*	243	UK
F. moniliforme	243	UK
F. moniliforme var. *subglutinans*	243	UK
F. oxysporum	243	UK
F. semitectum	243	UK
F. solani	243	UK
Macrophoma sapinea	243	UK
***Pinus pungens* Lamb.**		
Fusarium moniliforme	170	USA
***Pinus radiata* D. Don**		
General control	148	Australia
***Pinus resinosa* Ait**		
Geniculodendron pyriforme	88	Canada
***Pinus roxburghii* Sarg.**		
Alternaria alternata	198	India
A. tenuissima	188	India
Aspergillus candidus	188	India
A. flavus	198	India
A. funiculosus	188	India
A. humicola	198	India
A. niger	188, 198	India
A. terricola	188	India
A. versicolor	188	India
Chaetomium bostrychodes	188, 198	India
C. globosum	198	India
C. homopilatum	188	India
C. spirale	198	India
Cladosporium cladosporoides	188	India
Coniothecium sp.	198	India
C. atrum	198	India
Curvularia sp.	198	India
C. pallescens	198	India
Drechslera dematioidea	188	India
Fusarium bulbigenum var. *blasticola*	198	India
F. equiseti	170	India
Fusarium nivale	198	India
F. oxysporum	188	India
F. oxysporum var. *auranticum*	198	India
F. semitectum	188	India
F. sporotrichioides	198	India
Helminthosporium sp.	198	India
Memnoniella echinata	188, 198	India
Mucor globosus	198	India
M. hiemalis	198	India
Oedocephalum glomerulosum	198	India
O. lineatum	188	India
Penicillium sp.	198	India
P. brevicompactum	188	India
P. canadense	188	India
P. decumbens	188	India
P. notatum	188	India
P. rubrum	188	India
Periconia sp.	188	India
Pestalotia sp.	198	India
Phoma glomerata	198	India
P. hibernica	198	India
Rhizopus arrhizus	188, 198	India
R. cohnii	188	India
R. oryzae	188	India
Sordaria fimicola	198	India
Stachybotrys alternans	188	India
S. atra	198	India
Stemphylium botryosum	198	India
Stilbella nanum	198	India
Stysanus medius	198	India
Thielavia terricola	198	India
Trichoderma viride	198	India
General control	188, 198	India
***Pinus strobus* L.**		
Acremoniella atra	192	Canada
Alternaria alternata	192	Canada
Aureobasidium pullulans	192	Canada
Cladosporium cladosporoides	192	Canada
C. herbarum	192	Canada
Epicoccum purpurascens	192	Canada
Fusarium sporotrichioides	192	Canada
Mucor hiemalis	192	Canada
Penicillium aurantiogriseum	192	Canada
P. thomii	192	Canada
Rhizopus nigricans	192	Canada
Trichoderma viride	192	Canada

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Trichothecium roseum	192	Canada
***Pinus sylvestris* L.**		
Acremoniella atra	315	Czechoslovakia
Acrostalagmus cinnabarinus	315, 97	Czechoslovakia
Actinomyces sp.	101	Poland
Alternaria sp.	120	Hungary
A. brassicae	315	Czechoslovakia
A. circinans	233	USSR
A. irridicola	233	USSR
A. peponis	233	USSR
A. radicina	233	USSR
A. tenuis	233, 315, 97	Czechoslovakia, USSR
Aspergillus spp.	120	Hungary
A. candidum	233	USSR
A. flavus	101, 77	Poland, Czechoslovakia
A. glaucus	233	USSR
A. niger	97, 77, 233, 315	Czechoslovakia, Poland, USSR
A. oryzae	315	Czechoslovakia
A. ochraceus	233	USSR
Bacteria	101	Poland
Botrytis allii	315	Czechoslovakia
B. cinerea	77, 315, 101, 97	Czechoslovakia, Poland, USSR
Cephalosporium acremonium	315	Czechoslovakia
C. subverticillatum	315	Czechoslovakia
Cephalothecium roseum	154	USSR
Chaetomium sp.	101	Poland
C. bostrychodes	77	Czechoslovakia
C. indicum	77	Czechoslovakia
C. globosum	101, 97, 315	Czechoslovakia, Poland
C. spirale	101	Poland
Chettostylum fraseni	233	USSR
Cladosporium sp.	77	Czechoslovakia
C. epiphyllum	233, 315	Czechoslovakia, USSR
C. herbarum	315, 233, 120	Czechoslovakia, USSR, Hungary
C. naumovi	315	Czechoslovakia
C. sphaerospenum	315	Czechoslovakia
Coniosporium aterrimum	315	Czechoslovakia
Coniothyrium conicola	233	USSR
C. quercinum	315	Czechoslovakia
Curreya conorum	77	Czechoslovakia
Curvularia inequalis	315	Czechoslovakia
Cylindrocarpon radicicola	315	Czechoslovakia
Cylindrocephallum stellatum	233	USSR
Dicoccum aspernum	233	USSR
Diplodia conigena	233	USSR
Fusarium spp.	101, 120	Hungary, Poland
F. arthrosporioides	315	Czechoslovakia
F. avenaceum	233	USSR
F. coeruleum	233	USSR
F. culmorum	315	Czechoslovakia
F. heterosporum	315	Czechoslovakia
F. lateritium	315	Czechoslovakia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
F. moniliforme	233, 315	Czechoslovakia, USSR
F. oxysporum	97, 233, 315	Czechoslovakia, USSR
F. redolens	97, 315	Czechoslovakia, USSR
F. sarcochrum	315	Czechoslovakia
F. semitectum	315	Czechoslovakia
F. solani	233, 315	Czechoslovakia, USSR
F. sporotrichioides	233, 315	Czechoslovakia, USSR
Geniculodendron pyriforme	88	Canada
Gliocladium roseum	315	Czechoslovakia
Gonatobotrys sp.	77	Czechoslovakia
Helicomyces candidus	233	USSR
Helicostylum elegans	233	USSR
Helminthosporium rostratum	315	Czechoslovakia
H. sativum	315	Czechoslovakia
Helotium virgultorum	233	USSR
Hendersonia strobilina	233	USSR
Hormiscium antiquum	233, 77	USSR, Czechoslovakia
H. stilbosporum	233, 77	USSR, Czechoslovakia
Hydnum auricalpium	233	USSR
Hypoderma conigenum	233, 77	USSR, Czechoslovakia
Melanconium apiocarpon	315	Czechoslovakia
M. bicolor	315	Czechoslovakia
Monilia sitophyla	233	USSR
Mucor spp.	101, 120	Hungary, Poland
M. albo-ater	233	USSR
M. mucedo	77, 233	USSR, Czechoslovakia
M. plumbeus	233, 315	Czechoslovakia, USSR
M. racemosus	233, 315	Czechoslovakia, USSR
M. ramanianus	315	Czechoslovakia
Oedocephalum glomerulosum	101	Poland
Oospora verticilloides	315	Czechoslovakia
Ophiostoma sp.	315	Czechoslovakia
Paecilomyces varioti	315	Czechoslovakia
Penicillium sp.	101, 120	Poland, Hungary
P. arenarium	315	Czechoslovakia
P. canadicum	233	USSR
P. chrysogenum	315	Czechoslovakia
P. crustaceum	101	Poland
P. divergens	315	Czechoslovakia
P. expansum	233	USSR
P. glaucum	77	Czechoslovakia
P. roqueforti	315	Czechoslovakia
Pestalotia glandicola	315	Czechoslovakia
P. quercina	315	Czechoslovakia
Phragmotrichum chailetii	233	USSR
Propolis rhodolenca	77, 233	USSR, Czechoslovakia
Pullularia sp.	233, 315	Czechoslovakia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Pyronema amphalodes	101	Poland
Rhinotrichum repens	77	Czechoslovakia
Rhizopus arrhizus	101, 315	Czechslovakia, Poland
R. nigricans	120, 233	Hungary, USSR
Scopulariopsis brevicaulis	233	USSR
Sordaria fimicola	77, 233	USSR, Czechoslovakia
Spicaria divericata	77	Czechoslovakia
S. elegans	77, 233	Czechoslovakia, USSR
Stachybotrys lobulata	101, 77	Poland, Czechoslovakia
Stemphylium atrum	315	Czechoslovakia
S. ilicis	315	Czechoslovakia
S. paxianum	77, 233	USSR, Czechoslovakia
S. piriforme	315	Czechoslovakia
Stictis fimbriata	77, 233	USSR, Czechoslovakia
Stysanus medius	101	Poland
Syncephalastrum cinereum	233	USSR
Thamnidium elegans	77, 233	USSR, Czechoslovakia
Torula convoluta	315	Czechoslovakia
T. herbarum	77	Czechoslovakia
Trichoderma sp.	102	Hungary
T. lignorum	233, 315	Czechoslovakia, USSR
Trichothecium roseum	101, 77, 233, 120	Czechoslovakia, Poland, USSR, Hungary
Typhula peronata	233	USSR
Verticillium albo-atrum	77, 315	Czechoslovakia, USSR
V. glaucum	233	USSR
Zygorhynchus vuillemini	233	USSR
***Pinus taeda* L.**		
Acrospeira sp.	8	USA
Alternaria sp.	8	USA
Aspergillus sp.	8, 66, 169	USA
Asteromella sp.	8	USA
Bispora sp.	8	USA
Botryodiplodia sp.	66	USA
Candida sp.	8, 66	USA
Cephalosporium sp.	8	USA
Chaetomium sp.	8	USA
Chaetophoma sp.	8, 66	USA
Chlamydomyces sp	8	USA
Cladosporium sp.	8	USA
Curvularia sp.	8, 169	USA
Dendrophoma sp.	8	USA
Diplodia sp.	8	USA
D. pinea	251	Uruguay
Epicoccum nigrum	169	USA
Erysiphe sp.	8	USA
Fusarium sp.	66	USA
F. moniliforme	169, 170	Brazil, Canada, USA
F. moniliforme var. *subglutinans*	10, 23	USA*†
F. oxysporum	169, 251	USA, Uruguay
F. roseum	169	USA
F. semitectum	170	Canada
F. solani	170	USA
F. tricinctum	169	USA
Geotrichum sp.	8, 169	USA
Gilmaniella sp.	8	USA
Gliocladium sp.	8	USA
Gonatobotrys sp.	8	USA
Gonatobotryum sp.	8	USA
Hansfordia sp.	8	USA
Helminthosporium sp.	8, 66	USA
Humicola sp.	8	USA
Hyalodendron sp.	8, 169	USA
Isaria sp.	8	USA
Melanospora sp.	8	USA
Metarrhizium sp.	8	USA
Monilia sp.	8	USA
Monocillium sp.	8	USA
Monotospora sp.	8	USA
Myrothecium roridum	170	USA
Nigrospora spp.	8, 66	USA
Nodulisporium sp.	8	USA
Oidium sp.	8	USA
Olpitrichum sp.	8	USA
Papulaspora sp.	8	USA
Penicillium sp.	8, 66, 169	USA
Pestalotia sp.	8, 66, 169	USA, Uruguay
Phomopsis sp.	8, 66	USA
Phytophthora sp.	66	USA
Rhizopus sp.	8, 66	USA
R. arrhizus	169	USA
Sphaeronaema sp.	8	USA
Sphaeropsis sp.	66	USA
Spondylocladium sp.	8	USA
Sporothrix sp.	8	USA
Staphylotrichum sp.	8	USA
Syncephalastrum racemosum	169	USA
Tetracoccosporium sp.	8	USA
Torula sp.	8, 66	USA
Trichaegum sp.	8	USA
Trichoderma sp.	8, 66	USA
Trichothecium sp.	8, 66	USA
T. roseum	251	Uruguay
Tritirachium sp.	8	USA
Umbelopsis sp.	8	USA
Verticillium sp.	8	USA
***Pinus taiwanensis* Hayata**		
Aspergillus sp.	142	Taiwan
Bacteria	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Pestalotia sp.	142	Taiwan
Rhizopus sp.	142	Taiwan
Sphaeropsis sp.	142	Taiwan
Verticillium sp.	142	Taiwan
Sterile hyphae	142	Taiwan

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Pinus thunbergiana* Franco**		
Aspergillus sp.	142	Taiwan
Bacteria	142	Taiwan
Diplodia sp.	142	Taiwan
Fusarium sp.	142	Taiwan
Pestalotia sp.	142	Taiwan
Rhizopus sp.	142	Taiwan
Sphaeropsis sp.	142	Taiwan
Sterile mycelia	142	Taiwan
***Pinus wallichiana* A.B. Jacks.**		
Alternaria alternata	189, 198	India
Aspergillus caespitosus	189	India
A. candidus	189	India
A. flavus	198	India
A. funiculosus	189	India
A. fumigatus	189	India
A. luchuensis	189	India
A. niger	189, 198	India
A. sydowi	189	India
A. terricola	189	India
A. versicolor	189	India
Cephalosporium sp.	198	India
Chaetomium bostrychodes	198	India
C. globosum	198	India
C. homopilatum	189	India
C. murorum	189	India
Cladosporium oxysporum	189	India
Curvularia sp.	198	India
C. pallescens	198	India
Fusarium bulbegenum var. *blasticola*	198	India
F. oxysporum var. *aurantiacum*	198	India
F. semitectum	189	India
F. sporotrichioides	198	India
Gliocladium roseum	189	India
Helminthosporium sp.	198	India
Memnoniella echinata	198	India
Mortierella isabellina	189	India
Mucor sp.	189	India
M. globosum	198	India
M. hiemalis	198	India
Oedocephalum sp.	198	India
Penicillium sp.	198	India
P. albicans	189	India
P. canadense	189	India
P. expansum	189	India
P. notatum	189	India
Perisporium vulgare	198	India
Pestalotia sp.	198	India
Phoma glomerata	198	India
P. hibernica	198	India
Rhizopus arrhizus	198	India
R. oryzae	189	India
Sordaria fimicola	198	India
Stachybotrys atra	198	India
Stemphylium botryosum	198	India
Stilbella nanum	198	India
Thielavia terricola	198	India
Trichoderma viride	189, 198	India
Sterile fungi	189	India
General control	189, 198	India
***Pistacia vera* L.**		
Nematospora coryli	247	Central Asia§
***Pittosporum resiniferum* Hemsl.**		
Aspergillus flavus	73, 237	Philippines
A. niger	73	Philippines
Cladosporium cladosporoides	237	Philippines
Fusarium moniliforme	73	Philippines
F. solani	73, 237	Philippines
Penicillium sp.	73	Philippines
***Platanus occidentalis* L.**		
Alternaria spp.	91	USA
Aspergillus amstelodami	91	USA
A. niger	91	USA
A. ochraceous	91	USA
A. repens	91	USA
A. ruber	91	USA
Aureobasidium pullulans	91	USA
Bipolaris sp.	91	USA
Calcarisporium sp.	91	USA
Chaetomium cochliodes	91	USA
Cladosporium cladosporoides	91	USA
Coniothyrium sp.	91	USA
Curvularia intermedia	91	USA
Cytospora sp.	91	USA
Diplodia sp.	91	USA
Diplodina sp.	91	USA
Epicoccum nigrum	91	USA
Fusarium roseum	91	USA
F. moniliforme	91	USA
Gloeosporium sp.	91	USA
Helminthosporium spiciferum	91	USA
Nigrospora sp.	91	USA
Nodulisporium hinnuleum	91	USA
Penicillium brevicompactum	91	USA
Penicillium sp.	91	USA
Pestalotia spp.	91	USA
Peyronellaea sp.	91	USA
Phoma spp.	91	USA
Phomopsis sp.	91	USA
Sordaria fimicola	91	USA
Stemphylium sp.	91	USA
Trichoderma koningii	91	USA
Xylaria spp.	91	USA
***Polyscias nodosa* Seem.**		
Chaetomium sp.	2	Philippines
Cladosporium sp.	2	Philippines
Fusarium moniliforme	2	Philippines
F. semitectum	2	Philippines
Phoma sp.	2	Philippines

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***Pongamia pinnata* (L.) Pierre**		
Dothiorella sp.	135	India*
Glomerella cingulata	135	India*
Phoma sp.	135	India*
***Populus* spp.**		
Marssonina brunnea	290	New Zealand
***Populus tremuloides* Michx.**		
Necrotic leaf spot virus	37	Canada
***Prosopis juliflora* (Sw.) DC.**		
Fusarium equiseti	170	Chile*
F. moniliforme	170	Chile*, Brazil
F. semitectum	170	Chile*
F. solani	170	Chile*
Pestalotia sp.	170	Brazil
***Prosopis tamarugo* Phil.**		
Fusarium equiseti	170	Chile
F. semitectum	170	Chile
***Prunus* spp.**		
Agrobacterium tumefaciens	57	USA
Apricot gummosis virus	97	USA
Prunus necrotic ring spot virus	85, 97, 270	East Germany*
Pseudomonas syringae	57	USA
Virus	3	Romania
***Prunus americana* Marsh.**		
Prunus necrotic ring spot virus	27	
***Prunus amygdalus* Batsch**		
Bud failure virus	333	USA
Cherry necrotic rusty mottle virus	212	
Gnomonia circumscissa	14	Italy
Prunus necrotic ring spot virus	332	USA
***Prunus avium* (L.) L.**		
Apricot gummosis virus	27	
Prunus dwarf virus	47, 305	UK, West Germany
Ring spot virus	32	Germany
***Prunus cerasus* L.**		
Cherry necrotic rusty mottle virus	212	
Prunus dwarf virus	27, 173, 38, 109, 110	USA
Prunus necrotic ring spot virus	173, 104, 150	USA, Germany
***Prunus domestica* L.**		
Prunus necrotic ring spot virus	309	
***Prunus mahaleb* L.**		
Prunus dwarf virus	268, 48	E. Germany, USA
Prunus necrotic ring spot virus	48, 108	USA
***Prunus persica* Batsch**		
Prunus dwarf virus	96	USA
Prunus necrotic ring spot virus	96, 176, 375	USA
***Prunus serotina* Ehrh.**		
Cherry leaf-roll virus	272, 273	East Germany
***Pseudotsuga menziesii* (Mirb.) Franco**		
Alternaria spp.	257	Canada
A. consortiale	115	USA
A. tenuis	115	USA
Aspergillus spp.	115	USA
A. chevalieri	115	USA
A. flavus	115	USA
A. fumigatus	115	USA
A. glaucus	257	Canada
A. niger	257	Canada
A. phoenicis	115	USA
A. oryzae	115	USA
Aureobasidium spp.	31, 257	Canada
A. pullulans	115	USA
Botrytis sp.	257	Canada
Caloscypha fulgens	298	Canada
Cephalosporium sp.	31	Canada
Chaetomium sp.	257	Canada
C. gangligerum	115	Canada
Epicoccum purpurascens	115	USA
Fusarium sp.	257	Canada
F. poae	115	USA
F. oxysporum	137, 232	USA
F. solani	210, 137	USA
Gliocladium sp.	31	Canada
Hormodendron sp.	115, 257	USA, Canada
Mucor sp.	210, 257, 137	USA, Canada
M. racemosus	115	USA
Papulaspora sp.	115	USA
Penicillium sp.	257, 115	USA, Canada
P. chrysogenum	210, 137	USA
P. italicum	210, 137	USA
Pestalotiopsis funerea	129	UK
Phoma sp.	115	USA

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Phomopsis sp.	115	USA
Rhizopus sp.	210, 137	USA
R. arrhizus	115	USA
R. stolonifer	115	USA
Schizopyllum commune	241, 278	USA
Sclerotium sp.	257	Canada
Sepedonicum sp.	115	USA
Spicaria sp.	257	Canada
Syncephalastrum sp.	115	USA
Trichoderma sp.	31, 257	Canada
T. viride	210, 115, 137	USA
Trichothecium sp.	31	Canada
T. roseum	115	USA
Verticillium sp.	115, 257, 129	UK, USA, Canada
***Pterocarpus indicus* Willd.**		
Chaetomium sp.	2	Philippines
Cladosporium cladosporoides	2	Philippines
Colletotrichum gloeosporioides	170	Philippines
Fusarium moniliforme	2	Philippines
F. semitectum	2	Philippines
F. solani	2	Philippines
Macrophomina phaseolina	2	Philippines
Nigrospora sp.	2	Philippines
Pestalotia sp.	2	Philippines
Phoma sp.	2	Philippines
Phomopsis spp.	2	Philippines
Verticillium sp.	170	Philippines
***Pterospermum acerifolium* Willd.**		
Fusarium moniliforme	170	India
F. oxysporum	170	India
F. solani	170	India
Pestalotia sp.	170	India
Phoma sp.	170	India
***Punica granatum* L.**		
Coniella granati	21	USA
***Pyrus* spp.**		
Pear bark measles virus	65	USA§
Tobacco mosaic virus	111	
Truncatella laurocerasi	239	Romania
***Quercus* spp.**		
Absidia sp.	316	Czechoslovakia
Acremoniella atra	230, 313	Czechoslovakia, USSR
Acrospeira mirabilis	316	Czechoslovakia
Acrostalagmus cinnabarinus	230, 313	Czechoslovakia, USSR
Acrothecium tenebrosum	313, 316	Czechoslovakia
Alternaria humicolor	313, 316	Czechoslovakia
A. tenuis	230, 277, 313	Czechoslovakia, USSR
A. tenuissima	313, 316	Czechoslovakia
Arthrobotrys arthrobotryoides	313	Czechoslovakia
A. superba	313	Czechoslovakia
A. superba var. *oligospora*	313	Czechoslovakia
Aspergillus niger	313	Czechoslovakia
Botrytis cinerea	230, 277, 313	Czechoslovakia, USSR
Cephalosporium acremonium	313, 316	Czechoslovakia
C. subverticillatum	230, 313	Czechoslovakia, USSR
Ceratocystis fagacearum	15	USA
Chaetomium offine	230	USSR
Ciboria batschiana	74, 75	France*
Cladosporium elegantulum	313	Czechoslovakia
C. hordei	313	Czechoslovakia
C. subverticillatum	230	USSR
Coniomela taurica	230	USSR
Coniosporium aterrimum	316	Czechoslovakia
Coniothyrium quercinum	316, 317, 319	Czechoslovakia
Cylindrocarpon radicicola	316, 319	Czechoslovakia
Cytospora intermedia	277	USSR
Diaporthe spp.	319	Czechoslovakia
D. insularis	316	Czechoslovakia
Epochnium monilioides	316	Czechoslovakia
Fusarium sp.	230, 319	USSR, Czechoslovakia
F. avenaceum	277	USSR
F. bulbigenum	313, 316	Czechoslovakia
F. heterosporum	316	Czechoslovakia
F. lateritum	313, 316	Czechoslovakia
F. oxysporum	317	Czechoslovakia
F. merismoides	230	USSR
F. solani	316	Czechoslovakia
Fusella olivacea	316	Czechoslovakia
Gliocladium penicilloides	313, 316	Czechoslovakia
G. verticilloides	316	Czechoslovakia
Gnomonia quercina	277, 316	Czechoslovakia, USSR
Gonatobotrys flava	230	USSR
Helicosporium pulvinatum	316	Czechoslovakia
Macrophoma nitens	313	Czechoslovakia
Monilia sitophila	316	Czechoslovakia
Mucor sp.	316	Czechoslovakia
M. globosus	313	Czechoslovakia
Nigrospora oryzae	277	USSR
Oedocephalum glomerulosum	230	USSR
Oidiodendron griseum	316	Czechoslovakia
Oospora glauca	313, 316	Czechoslovakia
Ophiostoma sp.	277, 313, 316, 319	Czechoslovakia
O. valachincum	317	Czechoslovakia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
Paecilomyces varioti	316	Czechoslovakia
Papulaspora sp.	313	Czechoslovakia
P. sepedonoides	316	Czechoslovakia
Passalora sp.	316	Czechoslovakia
Penicillium spp.	230	USSR
P. divergens	313	Czechoslovakia
P. expansum	313	Czechoslovakia
P. funiculosum	313, 277	Czechoslovakia
P. luteoviride	313	Czechoslovakia
Pestalotia castagnei	277	USSR
P. glandicola	313	Czechoslovakia
P. quercina	316	Czechoslovakia
P. truncata	316	Czechoslovakia
Pestalotiopsis spp.	95	Europe
Phomopsis quercella	277, 319	USSR, Czechoslovakia
Piptocephalis freseniana	313	Czechoslovakia
Pullularia pullulans	313	Czechoslovakia
Rhizopus sp.	316	Czechoslovakia
R. nigricans	230, 313	USSR, Czechoslovakia
Schizophyllum alneum	277	USSR
S. commune	316	Czechoslovakia
Sclerotinia pseudotuberosa	230, 277, 313, 316	Czechoslovakia, USSR
S. libertiana	277	USSR
S. sclerotiorum	316	Czechoslovakia
Scopulariopsis brevicaulis	313	Czechoslovakia
Sepedonium chrysospernum	313	Czechoslovakia
Septocylindrium virens	316	Czechoslovakia
Sporotrichum roseum	313	Czechoslovakia
Stemphylium ilicis	316	Czechoslovakia
S. piriforme	316	Czechoslovakia
Sterum hirsutum	316	Czechoslovakia
Stysanus microsporus	313	Czechoslovakia
S. stemonitis	230, 313	Czechoslovakia, USSR
Torula convulata	316	Czechoslovakia
Trichoderma lignorum	230, 313	Czechoslovakia, USSR
Trichosporium cerealis	230	USSR
T. olivatrum	316	Czechoslovakia
Trichothecium roseum	230, 277, 313	USSR, Czechoslovakia
Valsa intermedia	316	Czechoslovakia
Verticillium sp.	319	Czechoslovakia
V. compactinsculum	316	Czechoslovakia
V. candelabrum	230	USSR
V. epimyces	230, 316	USSR, Czechoslovakia
Vuilleminia comedens	277	USSR
General control	149	
***Quercus alba* L.**		
Epicoccum purpurascens	324	USA
Fusarium solani	324	USA
***Quercus falcata* Michx.**		
Epicoccum purpurascens	324	USA
Fusarium solani	324	USA
***Quercus nigra* L.**		
Epicoccum purpurascens	324	USA
Fusarium solani	324	USA
***Quercus pedunculata* Ehrh.**		
Acrostalagmus cinnabarinus	154	USSR
Alternaria tenuis	154	USSR
Aspergillus niger	154	USSR
Botrytis cinerea	154	USSR
Cephalothecium roseum	154	USSR
Chaetomium globosum	154	USSR
Echinobotryum atrum	154	USSR
Fusarium oxysporum	154	USSR
Mucor globosus	154	USSR
Penicillium expansum	154	USSR
P. granulatum	154	USSR
Pestalotia hertigii	154	USSR
Rhizopus betavorus	154	USSR
Stysanus stemonites	154	USSR
Trichoderma koningii	154	USSR
***Quercus petraea* (Matt.) Lieb.**		
Ciboria batschiana	75	France*
***Quercus phellos* L.**		
Epicoccum purpurascens	324	USA
Fusarium solani	324	USA
***Quercus robur* L.**		
Ciboria batschiana	75	France*
***Quercus rubra* L.**		
Ciboria batschiana	76	France*
Discala umbrinella	76	France
***Robinia pseudoacacia* L.**		
Alternaria alternata	122	Hungary*
Fusarium equiseti	122	Hungary*
F. oxysporum	122	Hungary*
F. sporotrichioides	122	Hungary*
Guignardia robiniae	264	Japan*

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Samanea saman* Merr.**		
Aspergillus flavus	49, 73, 237	Philippines, Thailand
A. niger	49, 73. 237	Philippines, Thailand
Chaetomium sp.	49	Thailand
Curvularia geniculata	49	Thailand
Monilia sp.	49	Thailand
Penicillium spp.	49, 73, 237	Philippines, Thailand
Phoma sp.	49	Thailand
Syncephalastrum racemosum	49	Thailand
***Sambuscus* spp.**		
Tomato ring spot virus	320	USA
***Sambucus racemosa* L.**		
Cherry leaf roll virus	271	East Germany
***Serialbizia acle* Kosterm.**		
Aspergillus flavus	73, 237	Philippines
Chaetomium sp.	73, 237	Philippines
Penicillium sp.	73, 237	Philippines
***Sequoia sempervirens* (D. Don). Endl.**		
Coniothyrium sp.	72	USA
Penicillium sp.	72	USA
Pestalotia sp.	72	USA
Phoma sp.	72	USA
Phomopsis sp.	72	USA
***Sesbania grandiflora* Pers.**		
Aspergillus spp.	237	Philippines
A. flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Colletotrichum capsici	291	India
***Sesbania sesban* Merr.**		
Fusarium semitectum	170	Rwanda*
Phoma sp.	170	Rwanda
***Shorea* spp.**		
Aspergillus niger	181, 286	India*
***Shorea assamica* Dyer**		
Botryodiplodia sp.	131	Malaysia
Cylindrocladium sp.	131	Malaysia
Fusarium sp.	131	Malaysia
Penicillium sp.	131	Malaysia
Schizophyllum commune	131	Malaysia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Shorea acuminata* Dyer**		
Colletotrichum gloeosporioides	276	Malaysia
Macrophomina sp.	276	Malaysia
Phomopsis sp.	276	Malaysia
***Shorea materialis* Ridl.**		
Colletotrichum gloeosporioides	276	Malaysia
Fusarium oxysporum	276	Malaysia
Phoma sp.	276	Malaysia
***Shorea robusta* Gaertn. f.**		
Alternaria alternata	187	India
Aspergillus candidus	49, 187	India, Thailand
A. flavus	49, 187	India, Thailand
A. fumigatus	49	Thailand
A. funiculosus	187	India
A. koningi	187	India
A. niger	49, 187, 121	India*, Thailand
A. terreus	187	India
A. wentii	187	India
Chaetomium sp.	187	India
Cladosporium cladosporoides	187	India
C. chlorocephalum	187	India
Curvularia lunata	49	Thailand
Drechslera sp.	187	India
Fusarium sp.	49, 187	India
Mucor adventitius	187	India
Penicillium sp.	49	Thailand
P. albicans	187	India
P. canadense	187	India
P. frequentens	187	India
Phoma sp.	49	Thailand
Rhizopus nigricans	187	India
R. oryzae	187	India
Syncephalastrum racemosum	49	Thailand
Thielavia terricola	187	India
Brown, sterile mycelia	187	India
General control	187, 185	India
***Shorea roxburghii* Don**		
Cylindrocladium scoparium	275	Malaysia
***Shorea talura* Roxb.**		
Cryptodiaporthe sp.	276	Malaysia
Cylindrocladium scoparium	276, 275	Malaysia
Fusarium sp.	276	Malaysia
Macrophomina sp.	276	Malaysia

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
***Sweitenia macrophylla* King.**		
Aspergillus flavus	73	Philippines
A. niger	73	Philippines
Botryodiplodia theobromae	2	Philippines
Chaetomium sp.	2	Philippines
Cladosporium sp.	2	Philippines
Curvularia lunata	2	Philippines
Fusarium solani	2	Philippines
Macrophomina phaseolina	170	India
Mucor sp.	49	Thailand
Nigrospora sp.	2	Philippines
Penicillium sp.	73	Philippines
Pestalotia sp.	2	Philippines
Phoma sp.	2	Philippines
Rhizopus sp.	73	Philippines
Sterile mycelia	2	Philippines
***Tabebuia heptaphylla* Vell.**		
Macrophomina phaseolina	170	Brazil
***Taxodium mucronatum* Ten.**		
Fusarium semitectum	170	India
F. solani	170	India
Pestalotia sp.	170	India
Phoma sp.	170	India
***Tectona grandis* L. f.**		
Alternaria spp.	266	India
Aspergillus spp.	266	India
Botryodiplodia spp.	266	India
B. theobromae	170	
Cephalosporium sp.	170	India
Cercospora spp.	266	India
Chaetomium spp.	266	India
Curvularia spp.	266	India
Fusarium spp.	266	India
F. culmorum	170	
F. equiseti	170	
F. moniliforme	170	Thailand, India*, Philippines
F. oxysporum	170	India
F. semitectum	170	Thailand, India*, Philippines
F. solani	170	Philippines
Fusicoccum spp.	266	India
Gonatobotryum spp.	266	India
Hansfordia spp.	266	India
Humicola spp.	266	India
Macrophomina sp.	170	
Memnoniella spp.	266	India
Monocillium spp.	266	India
Mucor spp.	266	India
Myrothecium sp.	170	
Oedocephalum spp.	266	India
Paecilomyces spp.	266	India
Penicillium spp.	266	India
Periconia spp.	266	India
Pestalotia spp.	266	India
Phoma sp.	170	India, Philippines
Phomopsis sp.	170	India
Pithomyces spp.	266	India
Sporothrix spp.	266	India
Syncephalastrum spp.	266	India
Torula spp.	266	India
Trichothecium spp.	266	India
Verticillium sp.	170	India
Sterile mycelia	267	India
***Terminalia myriocarpa* Heurck & Muell.-Arg.**		
Pestalotia sp.	170	India
***Theobroma cacao* L.**		
Botryodiplodia theobromae	329	
Cacao swollen shoot virus	227, 228, 229	
Crinipellis perniciosa	18, 127, 167	Africa, Trinidad, Dominican Republic
Glomerella cingulata	201, 329	Romania
Monilia roreri	329	
Phytophthora sp.	322	
P. palmivora	307	Nigeria
***Thuja* spp.**		
Pestalotia sp.	93	Spain*
***Thuja orientalis* L.**		
Camarosporium sp.	195	Italy, France
Coniothyrium sp.	195	Italy, France
Pestalotiopsis funerea	195	Italy, France
Seiridium cardinale	193, 262	Italy*, France
***Tilia americana* L.**		
Myrothecium sp.	170	USA
***Triplaris cumingiana* Fisch. & Mey. ex A. A. Mey.**		
Aspergillus flavus	73, 237	Philippines
A. niger	73, 237	Philippines
Botryodiplodia theobromae	73, 237	Philippines
Cladosporium cladosporoides	237	Philippines
Curvularia lunata	73, 237	Philippines

Host and organism/ Hôte et organisme	Ref. No./ Réf.	Country/ Pays
C. pallescens	73	Philippines
Fusarium moniliforme	73, 237	Philippines
F. semitectum	73, 237	Philippines
F. solani	73, 237	Philippines
Macrophomina phaseolina	73, 237	Philippines
Penicillium sp.	73, 237	Philippines
Pestalotia sp.	237	Philippines
***Tsuga heterophylla* (Raf.) Sarg.**		
Caloscypha fulgens	298	Canada
Verticillium spp.	129	England
***Tsuga mertensiana* (Bong.) Carr.**		
Caloscypha fulgens	298	Canada
***Ulmus* spp.**		
Cherry leaf roll virus	29	USA
***Ulmus americana* L.**		
Cherry leaf roll virus	45	USA
***Ulmus campestris* L.**		
Rhizoctonia solani	206	Denmark
***Ulmus davidiana* Planch.**		
Fusarium moniliforme	170	South Korea
F. solani	170	South Korea
Pestalotia sp.	170	South Korea
Phoma sp.	170	South Korea
***Ulmus glabra* Huds.**		
Elm mottle virus	141	UK
***Ulmus pumila* L.**		
Gloeosporium ulmicola	105	Romania*
***Vitex parviflora* Juss.**		
Aspergillus spp.	2	Philippines
Penicillium spp.	2	Philippines
***Wallaceodendron celibcum* Koord.**		
Aspergillus flavus	73	Philippines
Fusarium semitectum	73, 237	Philippines
F. solani	73, 237	Philippines
Penicillium sp.	73	Philippines
***Xylia xylocarpa* var. *kerrii* (Roxb.) Taub.**		
Aspergillus flavus	49	Thailand
A. niger	49	Thailand
A. versicolor	49	Thailand
Penicillium spp.	49	Thailand

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